

THE FIRST CHAPTER OF GENESIS  
AS THE ROCK FOUNDATION  
FOR SCIENCE AND RELIGION

---

ALBERT L. GRIDLEY



B.C.

BS 651 .G75

**Gridley, Albert L.**

The first chapter of Genesis as the  
rock foundation for science and religion









# THE FIRST CHAPTER OF GENESIS AS THE ROCK FOUNDATION FOR SCIENCE AND RELIGION

BY

ALBERT L. GRIDLEY, A. M.

Author of  
"Jesus Only," "Suborganic Evolution,"  
"Organic Evolution," etc.



RICHARD G. BADGER

THE GORHAM PRESS

BOSTON

601  
375

COPYRIGHT 1913 BY RICHARD G. BADGER

---

All Rights Reserved

---

THE GORHAM PRESS, BOSTON, U. S. A.

**TO ONE**

*Who, in the twenty-seven short years of her life was  
always in look, word and deed filial, faithful  
and loving our daughter*

**RENA EMILY PETTIBONE**

*this little volume is affectionately inscribed*





## FOREWORD

**I**T is a remarkable fact in connection with both science and religion that the teachers in both realms have persistently overlooked the provision God has made that each should supplement the other.

His evident intention is that science should enlarge the borders of the religious sphere and that the Bible as a teacher of religion should not only keep abreast of scientific attainment but even lead the way to higher intellectual results.

While this is true of the whole Bible it is particularly so of the opening chapter of that book.

In earlier ages it served as an exercise of faith that was reasonable only because it formed a part of records that all through the ages have been regarded as the word of God and that all along bore the imprints of the Maker of all things. But in an age when science has advanced so as more nearly to comprehend its truth, it stands as a monument to a wisdom more than human. As such it lends its warrant to other records that are based upon it.

But before proceeding to develop thoughts along this line it may be well to outline a brief summary of the argument.

Consider first the cosmogony of Genesis I.

Geology has already established some propositions that are universally acknowledged to be correct.

1st. The earth was once covered with water and everything was at a very high temperature.

2d. Owing to rapid evaporation of water from the earth's interior heat, dense clouds formed in the upper

atmosphere which excluded the light from the heavenly bodies, and darkness was upon the face of the deep.

3d. After a time there were upheavals of the earth's crust and the continents began to appear.

4th. As cooling proceeded, precipitation would diminish the density of the overhanging clouds, and light could penetrate them enough to make a distinction between day and night, and to permit the existence of low forms of vegetable and animal life, long before one could locate the heavenly bodies.

5th. Vegetable life appeared before animal life.

6th. Low forms of animal life followed the first appearance of vegetable life.

7th. Following these, the higher forms of animal life appeared.

To say nothing of any others, here are seven propositions, reached by purely scientific methods, and yet they are clearly stated in the first chapter of Genesis. The writer of that chapter must have known something in general of the subject that he was writing upon.

Farther than this, the records in the rocks in countless instances confirm the biogenesis of that chapter, as will be shown in its proper place.

Admitting these confirmations by modern science of the records in Genesis we may look for further conclusions. The science of astronomy has been advancing for centuries. During the last century every advance, every newly discovered fact points to the conclusion that the original condition of matter was a very comminuted, dissipated one, call it nebula if you choose. It is somewhat dangerous to touch upon this subject for there may still be some who think, as the present writer once did, that this view borders upon atheism. Really, however,

it is one of the most fundamentally important revelations in the interests of religion that has been made in the progress of scientific discovery.

For one thing, if admitted, it establishes beyond the possibility of reasonable doubt, as will be shown, that there must have been a beginning, and that, astronomically, that beginning was but a very short time ago.

And again, if it can be shown to be reasonably certain that the writer of Genesis saw that truth also, it will add vastly to the probability that he knew something about other things that he has written.

The words that he uses with reference to the first condition of matter are "*tohu, bohu*," defined as "emptiness, vacancy," or "formless, void." Whatever other meanings these words may have, if any, they certainly convey the idea of matter in an attenuated, diffused condition. They as clearly define the probable first condition of matter as any words in the Hebrew language could do. At least, they settled the matter in the mind of the present writer. As stated above, he once held the nebular theory to border on atheism and attempted to prove by mathematical calculations that it would be impossible for a mass of matter in that condition so to contract as to form spheres moving in planetary orbits. But the result of his calculations in 1872 proved that it was possible and further, that the contraction must have been exceedingly rapid. From that time on he held the theory tentatively until the meaning of those words came to him like a revelation, and from that time there has been no shadow of doubt as to the manner of creation, for Genesis had spoken. The ions and electrons of modern science were balanced in the primitive atoms scattered through space, and what we call natural laws directing

the operation of physical forces caused them to assume the forms they have. Science and Genesis harmonize in this view.

It is, then, beyond a peradventure that from the appearance of primitive matter to the appearance of man on the planet the writer of Genesis I. has correctly described the necessary processes, or, to say the least, he is in harmony with modern scientific results.

This being so, there is reasonable ground to suppose that he may be correct in some other of his statements. Instead of setting up our own supposed knowledge as opposed to his supposed ignorance, it may be wiser for us to hold our own wisdom in abeyance and see if we cannot learn something from that writer.

One of the most seemingly absurd things in the order of events as recorded in Genesis is the appearance of light before that of the heavenly bodies. But, as stated in proposition 4 above, no one could dispute that in the natural order light could penetrate the clouds enough to make a distinction between night and day long before the sun, moon and stars could be located in the heavens. The only question is as to how long this condition could have continued. Men assume that it must have been very short. But this assumption is contrary to all other assumptions regarding cosmic processes. It may have been long enough to admit of all the events recorded in Genesis I. Men, even now, might learn something from one whose wisdom in this matter has been so wonderfully demonstrated.

In the earlier stages of the earth's history the changes were very rapid, but when the earth had cooled sufficiently to allow life upon its surface, they were much

more slow, so that ages might have passed before the heavenly bodies could have been located.

To pass for a moment beyond the first chapter. The idea has been ridiculed that there could have been no rainbow before the flood. But first, one may have been seen many times before without the significance that God attached to it after the flood. But if we have to admit that one had never been seen before, it is reasonable to suppose that over the limited area then occupied by the human race the rains could have been universal with no local showers. In that case there would have been no rainbow.

But one of the objections to the correctness of Genesis I. is in the use of the Hebrew word "rakia," "expanse," or, as it is translated, "firmament." This word is sometimes tortured back into one of its original meanings regardless of the fact that a word may have several meanings and that candor requires us to use that meaning that will fit into the connection and make sense. The sense here is determined by the narrative itself that speaks of "fowl that may fly above the earth in the open firmament of heaven."

Genesis speaks of grass or vegetation before animal life began. Every one knows that this is the order of nature though the rocks have not, as yet, yielded any fossils of "the tender grass" here spoken of.

There is no insuperable objection to receiving the entire narrative as scientifically correct though some of its statements may not yet be fully comprehended.

So much for the cosmology of that chapter.

An introductory hint as to the biogenesis of that chapter has already been given but another word is due. It is simply that, taking the records in Genesis as they

read and the records in the rocks as they are, there is absolute agreement. It is only when one puts impossible interpretations upon the record in geology that he finds any difficulties in Genesis.

Now, admitting some things that we cannot yet fully understand, there are enough statements that science has fully verified to prove that the writer of Genesis I. knew what he was talking about. The question then is, if he had a knowledge that has been reached only by several thousand years of scientific study, is it not probable that he knew what he was saying in the declaration, "in the beginning God created"? We are brought, then, by a process of connected reasoning, from the records in Genesis, confirmed by science, to God, the Absolute in philosophy, the Ultimate in science.

Men have tried to find God by searching along one line. He may be found by searching along either one of two lines if we had the ability to find the truth and the candor to admit it.

We may look along the line of science as Prof. Winchell has done in his very valuable book, *Reconciliation of Science and Religion*, but some may not admit the validity of the argument. We may look along the line of revelation, and God is found all through the book by those who admit a divine revelation, but some do not admit such a revelation. But putting the two together, we have writings sustained, proven true by science, and they plainly declare the existence of such a Being. We have direct statements backed up by scientific proof.

But the question arises, Are those writings above referred to a revelation? The writer of Genesis had a knowledge of cosmogony thousands of years before modern science was dreamed of. How did he obtain it? It could



hardly have been by unaided intellectual effort. If it were, men were vastly wiser in those early ages than they have ever had the credit of being. The most reasonable supposition is that the One who made the heavens and the earth in some way revealed the methods He employed. It is infinitely probable that the writer of that book was one of those "Holy men of God" who "spake as they were moved by the Holy Ghost."

Genesis I., then, furnishes a solid foundation for science and the first business of science is to build upon that foundation. God is, God created, God made is the absolute fact back of all philosophy. This, too, is the bottom fact of a true religion. Some of the essentials of a religion based upon this fact are outlined in the following pages.

A chapter, XIV, on the writer's own experience is given to establish the certainty of the further fact that this infinite God condescends to guide His trusting children. It is within the power of every one to know as certainly of the existence and the constant presence of God as to know the same of his earthly parents.

After all, the great final purpose of the sacred writings is to bring men into this immediate, personal relationship with Him.

To those who have learned God in this way it may seem unnecessary to look along the lines suggested above. They do not need to. But there may be those who have never found Him in this way and yet may be led by reason to look in such a way as to find a saving knowledge of the truth.

At any rate, one who has found Him by direct experience in any way need not depend wholly upon that

experience to convince another of the reasonableness of the faith that is in him.

He may base that faith upon conclusive, scientific proof. Science confirms Genesis and Genesis says "in the beginning God." He is the Author of religion. He is the Ultimate to which philosophy must appeal and beyond which science cannot go. Thus the chapter that contains such marvellous truths becomes the standard of truth, the Rock foundation of Science and Religion.

The chapters on Cosmogony and Biogenesis are to a considerable extent taken from booklets which the present writer had printed some time ago and a few copies sent out for examination and comment. Following these chapters are a few touching upon some of the more prominent features of the Christian religion.

While the writer believes that every position taken in these chapters is correct, there may be some that may not be readily granted. But however this may be, all that are essential to the present contention are either axiomatic, demonstrable or vouched for on the highest authority.

An appendix is added to make more clear some difficult parts, and it may be well for the reader to refer to it when necessary. To cast some side lights upon the problems of cosmogony an excursus is added.

Hoping that these thoughts may be of some assistance to the strengthening of an intelligent faith in the Bible as the word of God, with its attendant benefits to those two agencies for the upbuilding of true manhood, science and religion, they are respectfully submitted to those who may be inclined to read them.

A. L. G.

*Parsons, Kansas,  
October, 1913,*

# CONTENTS

CHAPTER	PAGE
<i>I The Cosmogony of Genesis and That of Science is the Same .....</i>	17
<i>II The Origin of Life as Described in Genesis and Recorded in the Rocks .....</i>	45
<i>III The Origin of Life as Described in Genesis and Recorded in the Rocks, continued.....</i>	60
<i>IV The Science of Geology, Confirming the Records of Genesis I .....</i>	75
<i>V The Fall of Man .....</i>	94
<i>VI The Story of Redemption .....</i>	102
<i>VII Subjective Salvation .....</i>	120
<i>VIII An Answer to Criticism—Isaiah .....</i>	131
<i>IX Another Answer to Criticism—Daniel .....</i>	140
<i>X Dangers of Egocentric Theology .....</i>	145
<i>XI The Bible as an Authority to be Obeyed.....</i>	156
<i>XII The Reasonableness of the Christian's Faith</i>	161
<i>XIII Individual Attitude .....</i>	167
<i>XIV An Individual Experience of God Present and Guiding .....</i>	173
<i>XV The New Life From God .....</i>	183
<i>XVI Concluding Words .....</i>	197
<i>Appendix .....</i>	201



THE FIRST CHAPTER OF GENESIS  
AS THE ROCK FOUNDATION  
FOR SCIENCE AND  
RELIGION





## CHAPTER I

### *The Cosmogony of Genesis and That of Science is the Same*

**B**EFORE considering the contents of this marvellous chapter it may be well to stop for a moment upon the popular conception concerning the ancient cosmologies.

Without dwelling upon the ideas of the Babylonians, Egyptians, the Indians and others, it is desirable here to mention only the supposed cosmology of the ancient Hebrews.

The most erroneous ideas are attributed to the sacred writers from such poetic expressions as "Hast thou with him spread out the sky which is strong and as a molten looking glass?"

Some think that this passage proves that Job thought that the sky was something like a brass vessel inverted overhead and scoured bright like an ancient mirror. This is one of a few passages upon which is based the idea of the ignorance of the ancients. But as opposed to this we quote again from Job (26:7, 8) "He stretcheth out the north over the empty place and hangeth the earth upon nothing. He bindeth up the waters in his thick clouds; and the cloud is not rent under them."

A little farther on in the same chapter (V. 13) he says "By his spirit he hath garnished the heavens; his hand hath formed the crooked serpent." In this he refers to the constellation, the Dragon. He speaks also of other constellations. Speaking of God he says, "Which maketh Arcturus, Orion, and Pleiades, and the chambers of the south." Again, "Canst thou bind the sweet influences of

the Pleiades, or loose the bands of Orion? Canst thou bring forth Mazzaroth in his season? or canst thou guide Arcturus with his sons?"

The constellations as we now have them were known and named hundreds if not thousands of years before the time of Moses. There is evidence that the constellations were already divided and named in the time of Enoch. Cassini commences his history of astronomy by saying "it is impossible to doubt that astronomy was invented from the beginning of the world." Sir William Drummond says, "the fact is certain that at some remote period there were mathematicians and astronomers who knew that the sun is the center of our system and that the earth, itself a planet, revolved around it."

In a recent article on *Progressive Astronomy* we read that Chaldea, Egypt, China, India, the Incas, the Aztecs, the Druids—all ancient peoples, back to prehistoric times, have observed the stars. The zodiac, or sun's path among the stars each year, the phases of the moon, the fixed constellations and wandering comets, the eclipses of the sun and moon and the conjunction of the planets were all known before Abraham left Ur of the Chaldees. Archaeologists have discovered, in Babylonia, multiplication tables as high, at least, as 1300, which were used, as Hilprecht observes, as we use logarithms and in astronomical calculations. It is very probable that the ancients knew as much about astronomy as we should know today without instruments.

The great pyramid of Egypt was built more than 600 years before the time of Moses, but an astronomer, taking a hint from that, calculated the distance of the sun within 270 miles of the results of the most accurate observations and calculations of the 19th century. The

builders of that pyramid knew the distance to the sun and left a record of their knowledge. Prof. Newcomb is right in the declaration that not enough credit has been given the ancient astronomers. There is no time within the scope of history when it was not known that the earth is a sphere.

As compared with the science of astronomy the book of Genesis is a recent work, and aside from any inspiration Moses was "Learned in all the wisdom of the Egyptians." Egypt, at that time, was the seat of the world's learning.

I have glanced at some of these facts to establish an antecedent probability that Moses knew something of what he was writing about even aside from any inspiration from on high.

There is reason, however, to believe that the original revelation concerning the creation was made to mankind ages before the time of Moses. The grotesque forms the story afterward assumed was the result of changes made by men who thought that they were too wise to accept it in its form as given, and so they modified it to suit their own wisdom.

Beginning now with the chapter, I pass over the first declaration, In the beginning God created the heavens and the earth, and pass to the condition of matter thus created.

The earth was "*tohu*," "*bohu*." These words are variously translated, as "without form," "void," or as Young defines them "emptiness," "vacancy."

There are probably no words in the Hebrew language that could more accurately define what science for the past 100 years declares to have been the primordial condition of the material composing our solar system. There

is every reason to believe that the writer used those words knowingly, and that he meant to convey the idea that it was in a very comminuted, dissipated form, not responsive to the sense of touch.

Without doubt this was the original condition of matter and if it were created in that form and then left to the operation of "natural law" as we should say, and physical forces, every phenomenon that scientists have since observed or proven to exist, would have followed in natural order and without further miraculous intervention. Further than this, there has been left recorded in nature the Divine plan and the Divine mode of operation.

Assuming, then, as a working hypothesis, that this was the first form of matter and that then it was left to the operations of natural law and physical forces, some things may be affirmed with certainty.

I. The nebulas must have been extremely tenuous. A moment's calculation would show that if it extended to the outmost known limits of our system it must have been at least 10,000 times as thin as common air at sea level. It must have existed as gas, vapor or dust. Gas is a form of matter whose particles seem to have the power of affecting other particles without actual contact as shown by sound and light. Vapor is a liquid in a state of minute sublvision and dust is a solid in the same condition. The nebula must have existed as one or more of these forms of matter. Above the temperature of 312 below zero, air exists as a gas. At that temperature it exists as a liquid, and perhaps at interstellar or absolute cold it would exist as a solid, and in nebula would be extremely comminuted. If this be true of air it certainly would be true of those

forms of matter that liquefy and solidify at much higher temperatures.

II. The nebula may have been either cold or hot.

The supposition used to be that it must have been originally at a temperature that would be required to return the system to that condition of tenuity. That assumption, however, is not essential to the theory. The concussion of condensation near the close of the process of star formation would produce more heat than there are traces of at present. If the temperature were originally very high, the nebula would have cooled with great rapidity, according to the law of radiation, from each separate particle with little hindrance by surrounding particles, rather than according to the law for the cooling of liquids or solids, in which heat must pass by conduction from the interior parts with radiation only from the surface. This is shown by the almost instantaneous cooling of gases formed by explosive compounds, in which the loss of heat is almost instantaneous. It is thus that the super-heated nebula would cool. The higher the temperature, the more rapid would be the process of cooling and the super-incumbent gases or other substances, though great in volume, would be so exceedingly tenuous as to offer but little resistance to radiation. If originally cold, as noted above, heat would be produced by the concussion of contraction and toward the close of the process of star formation the amount would be very great. In either case contraction could so proceed as to form a stellar system like our own.

III. Whatever its condition it must have been very much more dense toward the center. This must have been the case, at least when it existed within the boundaries of the present system. This conclusion is necessary



from the sizes of the planets. If the mass had been of equal density throughout, and Uranus and Neptune had taken their share of the material they would have taken from three-fourths to seven-eighths of all the matter in the solar system— $\frac{3}{4}$  if the nebula was diskoid,  $\frac{7}{8}$  if spherical. It was probably spheroidal as shown by the satellites of Uranus and Neptune. Instead, however, of having even  $\frac{3}{4}$  of the matter in the system, the sun itself contains nearly 10,000 times as much as they both combined. The nebula then must have been indefinitely more dense in its central than in its external portions.

IV. It must have rotated upon its axis—at least its external portions, in about the same time that Neptune revolves around the sun. When it had contracted to the orbit of Uranus it must have increased its rate of rotation to that of the planet Uranus in its orbit. And so of all. As it contracted, its rate of rotations must have increased so as to equal, successively, the orbital velocities of Saturn, Jupiter and so on. The orbital velocity of Neptune is about  $3\frac{1}{2}$  miles per second, that of Uranus about  $4\frac{1}{2}$  miles per second. Contraction must have proceeded at such a rate as to have produced that increase in orbital motion.

V. It then becomes a very easy problem to ascertain the rate of contraction as it is simply one of resultant motion.

In the diagram, Fig. 1, if, say, a body were moving along the line *a b* at a rate of 20 miles per hour and some other force should drive it along the line *a d* at a rate of 10 miles per hour it would take the direction *a c* and its rate could easily be determined. So its impulse along the line *a d* could be found if its rate along *a c* were known and the impulse along the line *a b*. It would be



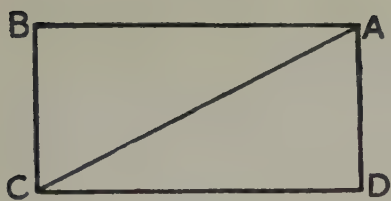


FIGURE 1

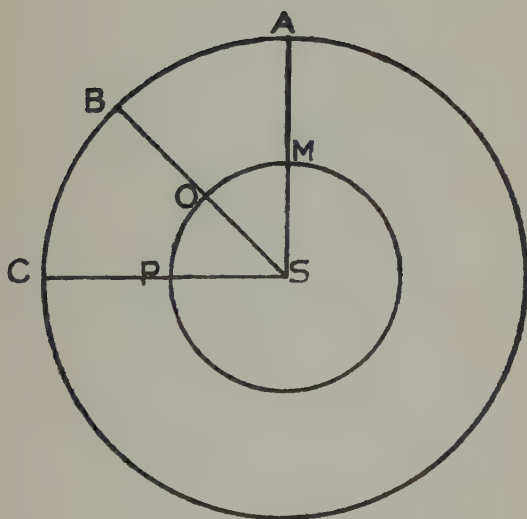


FIGURE 2



simply the square root of  $a^2 c^2$  square minus  $a^2 b^2$  square. The same would be true if the lines  $ab$ ,  $ac$  and  $ed$  were curved. This is the case under consideration. The orbital velocity of each interior planet is the resultant of the rate of velocity of the planet next exterior and the rate of contraction.\*

The rule for determining this is, From the square of the velocity of any interior planet, subtract the square of the velocity of the one next exterior and the square root of the remainder will be the rate of contraction. Applying this rule we find that the time for contracting from Neptune to Mercury is a little less than 25 years.

#### VI. Objections to this view of rapid contraction.

1st. It is generally thought that if the solar system once existed as a nebula extending to Neptune it must have taken millions or billions of years to contract. But this long period is based upon the assumption that radiation was never more rapid than it is at present from the sun. This could not have been the case. It is not conceivable that with a surface area 36,000,000 times the surface of the sun, and a volume 216,000,000,000 times that of the sun, and with its outer portions millions of times as tenuous as air, that it should lose heat only at the same rate that the sun now does.

The fact that gases do cool with great rapidity is constantly demonstrated. The loud report occasioned by explosives has been mentioned. Cases also have been known in which the walls of buildings have been blown outward near magazine explosions. When the building has stood far enough away not to be destroyed by the explosion and yet near enough to be influenced by it,

---

\*See appendix (a).

the instantaneous cooling of super-heated gas has created a partial vacuum and the air inside of the building has expanded in consequence with sufficient force to cause the walls to fall outward. The most signal illustration of this occurred in the explosive eruption of Mt. Pelee in Martinique. Immense quantities of super-heated steam or other gases displaced the air and, instantly cooling, the bodies of men burst as if instantaneously placed in vacuum. Super-heated gases cool with great rapidity.

Besides, there is hardly a possibility that the elements were in a gaseous state when they reached the present limits of the solar system. There is hardly a probability otherwise than that they existed as attenuated vapor and dust perhaps at an interstellar temperature.

For a further discussion of this subject see the author's *Suborganic Evolution*.

VII. The thickness of the rings must have been such that by the contraction they would produce the satellites and the axial rotation of the planets. The thicker the ring or mass, the more rapid the resulting rotation and, of course, the larger the planet, as per Kirkwood's law. The great rapidity, for example, of Jupiter's rotation is owing to the greatness of its mass, which extended far beyond its present position, and the outside portions moved with a velocity proportional to its distance. As it contracted the angular velocity would increase, while the actual velocity would also be increased by resultant motion. A seeming difficulty in applying this principle to Jupiter's rotation only accentuates the rapidity with which that planet assembled its elements, owing to the greatness of its mass.

VIII. The nebular masses forming the planets could

not have been of uniform density throughout. If they had been, the tendency would have been to form meteoric dust or meteorites, like the rings of Saturn.

IX. The original nebular mass must have been interspersed with nebular densities that formed the centers of the various planets and satellites.\*

X. The contraction of the whole mass from the exterior could not have been continuous, owing to the much greater density at the center. This occasioned the rupture between Jupiter and Mars, the fragments produced by the rupture forming the planetoids. The orbits of these bodies confirm this idea, particularly by the greater ellipticity of those nearer the sun. These having less motion than those more remote, while they would require a greater motion, necessarily move in more eccentric orbits, their positions at the moment of separation being aphelion.

XI. While the deposition of planetary nebula must have been very rapid, the assembling of planetary elements must have been very slow, as each planetary mass could have had only the attractive power of its own mass for assembling its parts. No figures can be made to even approximate the time, for so much depends upon the unknown quantities of dispersion, size and position of nuclear density, its physical condition and so on.

XII. Fragments detached from the main masses at any part of the process form meteorites revolving in elliptical orbits around the Sun.

XIII. The interior planets may be older, *as planets*, than the exterior ones, as from the increased density of their nebular masses the work of assembling would be

---

\*See appendix (b).

relatively more rapid ; still conditions unknown to us may have existed.

#### THE FORMATION OF THE SUN

We pass to consider the formation of the Sun. 1st. Although this is formed of the residue of matter after the planetary nebulae had been deposited—its power to assemble its constituent elements being so great owing to its comparative density, its great mass, its slight dispersion and so on—it is by far the oldest body, as such, in the solar system. If the material composing it had been of perfectly uniform tenuity and not gaseous, after depositing Mercury its contraction would have been in accordance with the law regulating the motion of a body falling through the earth, considering the earth of uniform density throughout. The force acting upon each portion would be in proportion to its distance from the center. As a pendulum vibrates through a larger or smaller section of its arc in the same time, so portions of the Sun's dispersed mass would begin movement toward the center, at rates calculated to bring them all to the center at the same time. Particles a mile from the center would move toward the center with a velocity only sufficient to make them reach the center at the same time that portions millions of miles from the center would.\* Theoretically all would be moving at rates proportional to their distances and all so as to reach the center at the same time. In this case, it would seem that the angular motions of the parts would have been practically uniform, and there would have been little tendency for other portions to flow around the interior portion except as the actual velocities of the outer portions were increased by resultant motion.

---

\*Appendix (c).

Even if the mass had been of uniform density when extending to the orbit of Mercury, there would have been some tendency for outer portions to increase the angular motion of rotation and flow around the portions within. But this tendency would have been indefinitely increased by the fact that, as we have seen, it was very much more dense in its central portions. This tendency must have been increased, too, if there had been any gaseous elements in its composition. In any event, precipitation would have begun very early and probably had begun when the outside planetary masses were left. This nucleus, if rotating on its axis at all, would have rotated very slowly, not more rapidly than the whole mass, or once in a year of Neptune, probably not so fast as that. Then as each layer of matter was deposited on the outside it would be moving not only with a greater angular but with a greater actual velocity, and every layer would flow around that within so that had no motion been imparted to the inner portions by the parts outside, we should have the center of the Sun revolving on its axis but once, perhaps, in a hundred and fifty or more years, while the outside would be revolving with a much higher velocity than at its present rate. Of course, if precipitation did not begin at the center of the Sun until after Mercury was left, still the core would have revolved on its axis only once in a year of Mercury or not so rapidly as that. Then as precipitation continued, each outer portion would have flowed around the parts interior to itself.

In figure 2, (facing page 22), suppose the whole body to be revolving with uniform motion. S, the core of the Sun, revolves in one of Mercury's years, and a point as A performs its revolution in the same time. It is evident that as A is twice as far from the center as M,



it would have just twice the actual though the same angular velocity as one at M. But when by contraction it reaches M, it will have twice the angular velocity it had at A even if its actual velocity had not been increased by resultant motion. In other words it would run around parts interior. This was the case during the whole process of the sun's formation. The outside portions continually flowed around the inner portions already formed. A remnant of this phenomenon still appears in what is called the equatorial acceleration of the sun's rotation. It is, however, transient and will soon disappear. It was thus that the present writer accounted for this phenomenon within a half hour after learning of its existence and eighteen months before reading of the calculations of Professor Sampson. Professor Sampson's calculations, however, confirmed in a very satisfactory and conclusive way the correctness of the author's own conclusions.

But the phenomenon presents itself in a very much more wonderful way and with much more conclusive proof as to its origin, in the planet Jupiter, and to a less extent in Saturn. Professor Charles A. Young in his text-book on astronomy observes:—"The planet rotates on its axis in about nine hours and fifty-five minutes. The time can only be given approximately, not because it is difficult to find and observe distinct markings on the planet's surface, but simply because different results are obtained from different parts according to their nature and their distance from the planet's equator. Speaking generally, spots near the equator indicate a shorter day than those in higher latitudes, and certain small, sharply defined, bright, white spots, such as are often seen, give a quicker rotation than the dark markings in the same latitude."

Everything in this exactly accords with necessary results if the planet were formed by contraction from a larger revolving gaseous spheroid or nebulous mass. As condensation proceeded, the outside portions, revolving not only with a greater angular but with a greater actual velocity, would flow around the portions already formed. The outside portions, which bear the small white spots, being partially, at least, transparent, reveal the more slowly moving portions within. The great red spot was an island or huge mountain peak pushed up by internal forces above the superincumbent and more rapidly moving layers.\*

The rotation near the equator is also more rapid than near the poles. If the planet had been diskoidal the phenomenon would have been much more apparent. But it is sufficiently spheroidal to make plainly apparent the method of its formation.

This view of the cause of equatorial acceleration is still more wonderfully confirmed by the facts contained in a note to the article quoted above.

“According to Williams there are at least nine ‘belts’ of atmospheric current on Jupiter clearly distinct from each other. The swiftest, at the equator, has a rotation period of only nine hours, fifty minutes, twenty seconds, while that of the slowest is nine hours and fifty-six minutes. The great red spot has given values ranging from 9 hrs. 55 min. 34.9 sec. (in 1879) to 9 hrs. 55 min. 40.7 seconds (in 1886), and 9 hrs. 55 min. 41.4 sec. (in 1896). The increase has been unmistakable and has not been due to any uncertainty in the observations.” †

---

\*See appendix (d).

† General Astronomy—Young.

The nine belts of rotation spoken of are not necessarily sharply defined and distinct from each other, but gradually merge into each other.

The most remarkable thing in connection with this whole subject is the rapid diminution of relative velocity of rotation, or slowing of the outside portions as their momentum is imparted to the portions interior. Note what is said of the "great red spot" and observe that there was a diminution in velocity of rotation of about six seconds in the 7 years from '79 to '86 while the diminution amounted to  $\frac{7}{10}$  of a second in the ten years from '86 to '96. This indicates the rapidly approaching end of inequality of rotation, or the time when the outer portions will have communicated enough of their own motion to the interior to make the whole rotate with the same angular velocity that the earth and all the smaller planets now do.

Observe the statement "The increase has been unmistakable and is not due to any inaccuracy in the observations."

The same phenomena once presented themselves in all the planets, probably, that are large enough to have passed from a nebulous through a liquid condition to their present condition. They may present themselves in Uranus and Neptune, but telescopes may not be sufficiently powerful to detect them. It is exceedingly fortunate that they were detected in Jupiter before they finally disappeared, thus hiding forever one of the brightest pages in the history of star formation.

These observations are made in this place because so immediately connected with the subject of the equatorial acceleration of the Sun's rotation.

Continuing with reference to the Sun, 2d, this equa-

torial current would by friction produce some heat but a quantity very small in proportion to its expenditure. Dr. Meyer calculated that a force sufficient to entirely stop the Sun's rotation would produce only heat enough to last the Sun 185 years.

3d. Precipitation at first would have proceeded very slowly. Not so slowly as in the case of the planets but still slowly.

This will appear if we consider (a) the mass as composed of dust or vapor. In this case, according to the law of pendulum vibration, parts near the center would move very slowly towards the center. For example: particles one mile from the center would have only a sphere of gas or vapor two miles in diameter to draw them towards the center, and in the condition of dust or vapor their motion would not be hastened by pressure of portions outside them. If we suppose (b) that it were gaseous, energy of compression would develop sufficient heat to materially retard precipitation.

But there is really no reason to suppose that the nebula's temperature was much above that of inter-stellar space. In that case not enough heat could be produced in the earlier stages of condensation to have produced luminosity. For example, when the nucleus of the Sun was a ball a mile in diameter its attractive power was but its present power at its surface divided by its diameter—800,000. At present the Sun's attraction would cause a body to fall 444 feet per second. When a mile in diameter, even if its density were the same as now, it would have attracted matter toward it at the rate of  $\frac{444}{800,000}$  or .000555 of a foot per second. Very little heat could be produced by that rate of motion. The center of the Sun may now be comparatively cold and solid, not yet having

become superheated by conduction from its outer portion, as the motion from the outer portions has not yet been fully communicated to the interior.\* The same may be true and probably is of the earth's interior. It may be cold and solid to near the surface, where there is a thin layer of molten matter over which is the cold outside layer.

4th. The temperature would increase with the increase in size of the forming body. The larger it became, the greater would be its power of attraction, drawing more matter to itself in a given time and giving each portion a greater kinetic effect.

The precipitation of nebular densities would produce seasons of greater luminosity. Generally the period of greatest luminosity would have been towards the close of its formation period. Some variable stars may be accounted for in this way.† They are still forming. To illustrate, consider a possible contingency in the formation of our own system. If the nebulous masses that formed the planets of our own system had not been moving with sufficient velocity to prevent it, each one would have been precipitated upon the Sun, successively producing seasons of greater luminosity until the outmost one had fallen upon the sun.

In this case the seasons of greater luminosity would have succeeded each other with but short intervals. The inter-stellar spaces, however, are so vast that a distant sun may have its brilliancy increased by the precipitation of nebular masses or stellar bodies that it has been years or hundreds of years in drawing to itself. The increased

---

\*See appendix (e).

†See appendix (f).



brilliancy of Nova Persei as well as that of many other variable stars was undoubtedly owing to this cause.

5th. Can the system ever return to a nebulous condition by heat generated by the precipitation of planets into the Sun? The theory used to be advanced that possibly the precipitation of planets into the Sun might sufficiently raise the temperature to restore the system to a nebula again, to undergo changes such as it has perhaps passed through. But (a) the succession of shocks would be at such long intervals that the heat produced by one would be dispersed before the next one, and if it were possible for all the planets to strike the Sun at the same time, there would not probably be the millionth part of the necessary amount of heat produced for such an effect.

Again such an accidental, so to speak, expansion could no more produce the solar system by contraction than throwing a handful of dust into the air would produce a watch.

If any one of a vast number of circumstances in the beginning had been different, results would have been different. It would be impossible for any accident to reproduce those circumstances such as rate of rotation, size and position of nebular densities, extent of dispersion of nebulous masses, and so on. Note one particular, rate of rotation. A point on the surface of the Sun now moves at the rate of about a mile per second. If it were to expand to the orbit of Mercury, it would have to have its velocity increased to 29 miles per second in order by contraction to again deposit that planet. This illustrates the case of all. It may be urged that the precipitation of a planet would necessarily be upon one side of the Sun near the equator and this would naturally tend to accelerate its rotation. That is very true, but the answer

is apparent. Every pound of energy expended in the production of motion is lost for the production of heat, and any planet is so small as compared with the Sun that if all the energy of its fall were expended in accelerating the Sun's rotation and none at all for the production of heat, it would produce an unappreciable fraction of the required motion.

The same is true of all of them put together. How, then, could they produce the necessary heat and motion both?

“The Sun is but a spark of fire,  
A transient meteor of the sky.”

There was a beginning, there must also be an end of the present order of things.

#### OBJECTIONS

It may be well to consider a few objections that may be urged against the possibility of the hypothesis. Many have been urged which a moment's consideration at once disposes of. Some are not so easily answered.

1st. There are many nebulae now that are not undergoing any such changes as contemplated above. But the answer is, they were differently constituted. Some may be undergoing changes very slowly, others more rapidly.

2d. The motions of the satellites of the outermost planets of the system. These motions only argue a more spherical form for the nebula than it afterwards assumed as rate of rotation increased, also that the original nuclear densities were farther removed from the plane of the planets' orbits.

3d. The action of Phobos, the inner moon of Mars, that rises in the west and sets in the east. The revolu-



tion of that satellite is more rapid than the axial rotation of the planet, that is, it passes around the planet in less time than the planet turns upon its axis. This, of course, is well known. But the comparatively slow rotation of the planet (only, however, a little slower than the earth's) is owing to the relatively greater mass of the nebular density that formed not only the nucleus but a large portion of the planet. It is only an evidence for the author's view that such densities must have existed. Every such density before separation from the parent mass rotated on its axis once during its rotation around the Sun.

Any additional velocity arises both directly from contraction and indirectly by resultant motion from that contraction.

The greater and denser the central mass, rotating slowly, the greater the resistance to the forces that would accelerate it, coming from the more swiftly moving but much lighter outside portions. The outside portions of the Sun, Jupiter and Saturn are all moving more slowly than they once did, for they are and have been imparting motion to interior parts. The interior parts are rotating with a higher velocity for they have been receiving that motion. With Mars, the original slowly rotating center was so comparatively great that, after receiving all the motion that the outside tenuous portions could impart, its rotation was only increased to its present rate.

It is not necessary to suppose that the axial rotation of Mars has been retarded. It simply has not been more accelerated. We have a suggestion as to the condition in the small white spots on Jupiter. They move more rapidly than the rest of the planet, and if there were no visible connection between them and the planet, they

would seem to be satellites revolving around it in a shorter period than the planet's axial rotation.

They would seem to rise in the west and set in the east. The same would be true of a body at the equatorial surface of the Sun or Saturn. The case of Mars and Phobos is but the same condition magnified. When the nebulous mass that formed Mars and its satellites extended to Deimos—its outer moon—the outside was revolving with sufficient rapidity to deposit that moon, i. e. in 30 hrs. 18 min. But the center may not have rotated with the same angular velocity, any more than that of the Sun or Jupiter or Mars now does.

When it contracted to the orbit of Phobos, the outside again may have rotated and did rotate with the velocity with which that moon now moves. But the main central mass may not have revolved in less than thirty or forty hours. The precipitation of the rapidly moving but very tenuous outside portion would have increased the rotation to its present rate.

It offers no obstacle to the hypothesis. In fact, so far as known there is no insuperable objection to the theory, but every circumstance that has seemed to present difficulties has, upon examination, only revealed some additional conditions, and thus enlarged our knowledge of what the original conditions must have been. Before the peculiar rotation of the Sun, of Jupiter and probably Saturn was discovered, it is said that astronomers had pointed out something like three hundred remarkable coincidences that could not well be accounted for upon any other supposition than that the entire solar system had developed from a parent mass of attenuated dust, "emptiness," "vacancy." The recently discovered peculiarity in the axial rotation of the Sun, Jupiter and

probably Saturn affords the final, and, as it may well be considered, conclusive proof that the original condition of the earth was *tohu, bohu*. At least it carries the evidence to an exceedingly high degree of probability, and such a probability as does not exist with reference to any other theory.

Some conclusions necessarily follow :

1st. No unaided human being could have known the circumstances and have described them so tersely and accurately. The words in Gen. 1:2 were written centuries before modern science was born or men had dreamed of the nebular hypothesis. Hence the narrative must have been *inspired*. The One who made the worlds alone could have imparted a knowledge of His methods to the one who wrote the account.

2d. The matter must have been *created* very near the time the planetary masses were deposited. There is no conceivable theory as to the eternal existence of matter *as such* that can stand a moment's investigation. It is true that the potentiality of matter existed from eternity in the personality of the Creator, but it did not assume the form of matter until He willed it. The modern verification of Newton's theory of matter makes it indefinitely easier to conceive of creation than when the old ideas prevailed. At least that is true of those who admit the existence of a Creator.

3d. The creation must have been *comparatively recent*. The sun is the oldest globe in the solar system and Jupiter, owing to its mass, assembled its material so rapidly that it may be the next oldest, or at least it cannot be far from it. But neither of them has existed as a globe long enough for their motions to become equalized, so but that the outer portions still flow around

the interior parts. This idea of the *recency* of creation makes the *fact* of creation more visible to our minds, more *real*.

Owing to the limitations of our minds a fact seems to dissolve or lose its force as a fact if pushed too far back in the infinite past. The fact of creation is not so remote as to lose its force as a fact. It is a thing of yesterday. It is easy to conceive that Jupiter's rotation could have been such that for thousands of years its equatorial rotation could have been retarding and that some of its acceleration should remain. But it is hardly conceivable that this could have been going on for millions of years. The estimates as to the age of the earth have of late been decreasing, and yet they are probably too large. They seem to be based upon the supposition that the disintegrating and erosive agencies were never more active than at present, and that the rocks were never softer than they are now. But in the very nature of the case such suppositions must be incorrect. For instance, it is not conceivable that Niagara was not more active when the vast inland sea, of which the Great Lakes are the remaining puddles, was draining off and pouring its waters toward the Gulf of St. Lawrence, as well as toward the Gulf of Mexico.

Then as to the rocks. The fact of their being sedimentary presupposes a former soft condition like a sand bank, in which erosion is easy. It is certainly supposable that when portions of the continents first emerged from the waters, they were still soft and easily worn away. The grand canons of the Colorado may have been cut under circumstances in which a few decades would accomplish more than millions of years in present circumstances. But without dwelling upon the evidences

in geology, those in astronomy point unmistakably to the comparative recency of creation.

4th. Another conclusion is that, as the writer of these words in Genesis seemed to utter a truth, it is eminently probable that the first statement is true, "In the beginning God." There is a practically infinite probability that the earth was "emptiness, vacancy," and the probability that the writer knew what he wrote makes it probable that he also knew that "in the beginning God" created. The first declaration in Gen. 1:2 is pregnant with immeasurable meaning, and the religious world can never discharge its debt of gratitude to science for turning its search light upon it and enabling men to read that meaning.

The next declaration is, "And darkness was upon the face of the deep." In any rational view of this chapter we must admit that the writer takes no account of time and that the word "day" refers to a period of time. The sequence at least is orderly. After the globe had formed, without reference to time, "darkness was upon the face of the deep." It is hardly possible that our globe as such could ever have presented a luminous appearance. The entire surface was enveloped by a layer of water ten thousand feet deep. While the ball was hot this could only have existed as an envelope of superheated steam, and this again surrounded by an outer covering of vaporous clouds formed by radiating their heat into outer space. To an outsider, our planet would have presented the appearance of a ball of clouds which light could not penetrate either from within or from without. And this emphasizes again the *extreme rapidity* of the cooling process. Every one knows that water poured upon a hot



surface will absorb heat with great rapidity, carry it off and lose it by radiation.

This would be the process in the case under consideration. A mass of steam and vapor enough to make, when condensed and precipitated, a layer of water ten thousand feet deep was the medium for conveying the heat from the surface to outer space. As the temperature diminished the water would gradually remain as such and accumulate to form seas, while dense clouds of vapor would still overhang the earth. There was a "deep" and darkness was upon the face of it, and too, at first it covered the whole globe. There was a time when there was no dry land. The declaration then, "And darkness was upon the face of the deep," expresses a fact which is abundantly substantiated. The appearance of light and day as opposed to night before mention of the sun presents no difficulty, for that would be the necessary order. The account is written from the view point of the earth's surface. After the earth's surface had cooled sufficiently for the main portion of the waters to remain in contact with the solid matter, the cooling process would be much slower and perhaps for ages the earth would be enveloped with clouds of vapor dense enough to completely hide the sun, as a body, and yet admit sufficient light to distinguish between day and night.

Indeed the theory that this was the condition up to the time of the Noachian deluge is not entirely without foundation. It may be that the sun never penetrated the clouds sufficiently to form a rainbow until that flood subsided, and that the hot house condition then existing accounted for the long life of the antediluvians. This theory, however, is not essential to the present conten-

tion. It is sufficient that day and night could have succeeded each other for some time before the heavenly bodies, as such, were distinguishable. The writer has lived for years where the mists, rising from Lake Michigan, have clouded the sky and obscured the sun for weeks at a time, and for months it would only occasionally break through. It could not have been otherwise than that for ages, perhaps, the sky was overcast with clouds so as to hide the sun and yet day and night be perfectly distinguishable. "There was evening and there was morning, one day." Evening was mentioned first for darkness preceded the light.

With reference to the word "day," but little need be said, for it has been the opinion of many scholars and theologians from the time of Augustine that the word refers to a period of time rather than to a twenty-four hour day. With regard to the "firmament," the meaning of the Hebrew word *rakia* is expanse, expansion. Whatever its derivation, or whatever other meanings it may have, the meaning here is apparent for one thing from the statement in the 20th verse, "and fowl that may fly in the midst of the firmament." It is as correct and expressive of the truth as any scientific term that could be invented at the present day. And when the writer speaks of the heavenly bodies as being "set in the firmament of the heaven" candor requires us to think that he uses the words popularly as we speak correctly of "the stars of the sky."

The emerging of the continent from the water is next described, and it is necessarily next in geological order. The fact that the waters once covered the whole surface of the earth and that the land emerged from them is a geological truth that needs only to be mentioned.



The appearance of grass is next mentioned. The fact that geology has few records of the "tender grass" (Hebrew) is not surprising for it could hardly exist as fossils. So of the herb and fruit trees. However, the Algae appears as far back as the Eozoon, or first form of animal life. The term "fruit tree" does not necessarily mean the apple, pear, plum and other trees now specifically designated by that term. It may even refer to some of the vegetation that formed our coal measures. However this may be, vegetable life must have preceded animal life as the record in Genesis states. All these could have flourished before the heavenly bodies as such could have been seen from the earth's surface.

With regard to the appearance of these heavenly bodies, as before stated the narrative seems to have contemplated the earth's surface as the writer's standpoint. The sun, moon and stars would be mentioned when first seen. But it is not necessary to infer that the writer even thought that they were not created until that time. The statement is simply "God said, Let there be lights in the firmament" and so on, followed by the declaration, "God made two great lights . . . . He made the stars also." This view is sustained by the fact that the writer does not use the Hebrew word *bara* (create) but *asak* (to make). In the beginning God created the heavens and the heavenly bodies. At this juncture He made them to appear, or in time He may refer to a remote past.

## CHAPTER II

### *The Origin of Life as Described in Genesis and Recorded in the Rocks*

**T**HE next period introduces animal life. This together with that of vegetable life and that of man requires a more extended study. The first inquiry is concerning what Genesis actually teaches as to the origin of life and then how that teaching is corroborated in nature. There is first the statement that "God created (*bara*) great sea monsters," and also God created (*bara*) man in His own image. "In the image of God created (*bara*) he him." The same word is used with reference to both Adam and Eve, "in the image of God created (*bara*) he them." This statement is made twice with reference to both. The same word is employed eight times in Genesis with reference to the human race and eight times in other parts of the scriptures, where it is translated "create, created," and once where it (*bara*) is translated "made," as in Ps. 89:47, "Wherefore hast thou *made* all men."

With reference to the lower forms of life we read, "And God said, Let the earth bring forth grass" and so on, (Gen. 1:11, 12). And again, "Let the waters bring forth abundantly" and so on. The word "create" is not here used, but the Psalmist (Ps. 104:30 and 148:5) uses the word *bara* with reference to practically all of God's works. They came into being at the fiat of God. But it may be urged that this may refer only to the *fact* of creation and not to the mode, and that mode may be gradual development, as the solar system was *created*

and yet took ages for its completion. The analogy, however, could hold only as far as the development of grass, herbs and trees from the seed is concerned, or the "swarmers" from the ova without a transmutation of species. The apparent meaning seems to be that grass was created as grass, herbs as herbs, trees as trees, the sea "swarmers" as such, and that the creation form was the terminal form. That is the popular understanding of these words and that is the way the great naturalist, Charles Darwin, understood the narrative. But he believed in that system of phylogenetic zoology popularly known as evolution. Considering this system of zoology as merely *modal*, the narrative in Genesis is correct whichever view is taken. Were it not for the vast structures of philosophy, history, theology, and Christology that are built upon the evolutionary theory the distinction would be worthy of but little thought. But in view of such structures as are based upon this distinction it becomes necessary to examine briefly the subject and claims of Organic Evolution.

#### ORGANIC EVOLUTION

In speaking of Evolution in general we are confronted with the indefiniteness of the term as commonly used. It may mean little or it may mean a great deal. There are three main divisions of the thought as commonly expressed by the word, the sub-organic, the organic, and the super-organic. The first refers to the development of matter without life to different forms and is applied generally to the formation of the solar or stellar systems from some more crude conditions of matter. This has already been referred to in a few words.\*

---

\*Above, Nebular Hypothesis.

Organic Evolution is the name for a process, real or imaginary, of derivations or development of the forms of life, vegetable and animal that have existed or that now exist in the world.

Superorganic Evolution refers to the same process in metaphysical spheres. At present we have to do only with organic evolution. But here, even in this restricted application of the word, the widest divergence of opinion as to the use of the term prevails. It is applied to the ordinary growth of a vegetable from a seed, the hatching of a chick from an egg or the change of a tadpole to a frog. It is applied also to the gradual, progressive developments made without interference from without, but by its own inherent potentiality, of some primordial germ to all the varied forms of vegetable and animal life that have existed on the globe. Between these two extremes there exist almost as many degrees of thought as there are men who receive the hypothesis. Some admit but one or at least but very few starting points for the upward movement, some admit more. There seems to be no one very definite consensus of opinion regarding the number of creation centers, to use a theistic evolutionist's phrase.

Further than this the term is also applied to a mere category of thought without reference to material development.

Further still it is thought of as Causal, or modal, that is as the Cause of all life, or as but the mode by which a personal Creator has brought about the diversified forms of life. In other words it is thought of as atheistic or theistic.

---

\*Above, Nebular Hypothesis.

## CAUSAL EVOLUTION

At this point we may consider the probabilities that all the advance in the universe has been in accordance with laws and by forces inherent in themselves independently of any exterior power or Great First Cause.

If we were to admit that the solar system has never existed in any other than its present form, that the sun has always had its present form, that the earth and other planets had never existed in any other form, it would be comparatively easy to believe that they could have existed in their present form from Eternity. The sun's continued luminosity would be the only thing to account for and many various theories have been advanced to do this. One could look upon the earth and say that it had existed just as it is from all Eternity, and so of celestial objects, but when we admit as true a declaration from writings that are at least entitled to our respect, "The earth was without form and void," all this is changed. There is no possibility that changes like those we have been contemplating could have been going on from a past eternity. There must have been a beginning, and judging from the condition of the sun, the planet Jupiter and Saturn and perhaps others, that beginning was quite recent. There is no possibility that the solar system could have been undergoing changes according to a theory of self-perpetuating metamorphoses. This has been considered. The space now occupied by the solar system could not have been filled from eternity with the dust vapor or gas that never responded to the power of gravitation or cohesion until within recent years.

Nothing in the universe more clearly points to a beginning than the solar system, when conceived of as having once existed in the form described in Gen. 1: 2. There

is no theory as to the eternity of the matter in the solar system more tenable than that a quantity measured by a mathematical zero could contain within itself the power to multiply itself to infinity. Granted a beginning and *a priori* it is as reasonable to predicate a Cause for that beginning as to suppose that a universe sprang of its own accord from nothingness. But aside from this and aside from the declaration in any writings extant, there are collateral and direct evidences of such a great First Cause. We may dismiss as sufficiently understood the first group of collateral evidences such as the cosmological, ontological, teleological, moral and so on, and consider as matter of scientific value a direct, personal, and positive knowledge of such a Cause. And in this connection this subject is introduced not as a matter of sentiment, emotion or religion but as a matter of inestimable value to the scientist who would go deeper than a mere superficial knowledge of phenomena.\*

A knowledge of such a Cause is as essential to knowing nature as a knowledge of steam is to an engineer. We may imagine a man who knows something of machinery watching the movements of the piston rod of a great engine. He sees and recognizes the relations of other parts of the machinery to the piston rod, but positively refuses to admit that there is any power or anything that exerts power in the cylinder. It is the nature of the piston rod to move back and forth and the development

---

\*The writers (or scientists?) who have criticised the late Lord Kelvin for inferentially admitting the existence of a First Cause display a superficiality that would invalidate any of their own conclusions reached by original investigation.



of its power is an accident. He goes to see an experimental engine in which the cylinder is of glass so that he can see the interior. Then he knows that there is nothing to move the piston back and forth but that it moves because it is its nature to do so. He can see the head of the cylinder, the piston rod and all there is, and there is nothing there. He might have considerable knowledge of machinery, but if his prejudice against the fact that there is such a thing as steam should prevent his taking any steps to find out about it, he could hardly find employment as an engineer where any great interests were at stake. Not that he might not know what levers to pull or what joints to oil, or what other routine motions to make, but the fact that prejudice prevents his obtaining a knowledge of something intimately connected with his business when that knowledge was clearly and easily within his reach would argue a mind unbalanced to such an extent as to render him unfit for responsible positions. Nature is such an engine, with a great invisible Cause at work first to produce it, then to work through it.

That Cause is knowable as to fact, though unknowable in the infinite reaches of his being. Here we stand on solid ground, that of absolute knowledge. There is no use of mincing words or making concessions to the unbelief of those who have never sought to know that Cause by methods adapted to the nature of the subject. Adaptation to the nature of the subject investigated is always essential. One could not find the moons of Jupiter by the methods of the alchemist nor microbes by astronomy. The methods of investigation must be adapted to the subject investigated. There may once have been an instinct in every human being that could direct him to the right methods of investigation in order to find that cause.



At any rate there is a hint contained in a book within the reach of all that will start one right, "Then shall ye find me when ye shall search for me with all your heart."\* This is but the requirement for the successful pursuit of science along any line. The moral nature must be such as to insure candor in the investigation, the will must be in such an attitude as to accept results. The only difference is that in searching for the great First Cause more depends upon the attitude of the will and condition of the moral nature than in the search for lower objects. But no man has ever complied with the prescribed conditions who has not found God as an objective fact and the master fact of the universe. As stated before, he may not, cannot, know Him in the infinite reaches of his being but he may know him as a fact and enough of him for his own practical needs. One may know the fact of the Mississippi river, and enough of it to supply him with drinking water and to row his boat upon, and yet not have explored it from its mouth to the source of all its tributaries. So one may know God as a fact and enough of Him to supply all his needs and yet not know all about Him. But this knowledge may increase. "Then shall we know if we follow on to know the Lord."† This knowledge of a fact and as a fact vitally connected with all we know of nature has never been sufficiently emphasized. Men are apt to tread softly, and speak temporizingly and make concessions, and be very uncertain when the fact is questioned. It need not be so. One may speak positively when he says there is such a thing as a central sun in the solar system, though some blind men

---

\*Jer. 29:13.

†Hos. 6:3.

may say that they do not know it and it is unknowable. The sun as an objective fact is known by millions of people, and known as independent of the cognitions of any man or set of men. God as an objective fact exists and is known by millions of men and as an objective fact exists independently of the cognitions of any subjective "ego."

If any one is ignorant of that fact or in doubt with reference to that fact, it is because he has never pursued an investigation adapted to the nature of the subject, and is ignorant of the fact most intimately connected with everything that can be known. And this fact corroborates a statement not only that there was a beginning to the cosmos, but in the beginning "God," and we may carry out the statement, "In the beginning God created the heavens and the earth." And this truth is the cornerstone of that rock foundation that we find in Gen. 1, for exact science as well as for revealed religion. Admitting this fundamental fact, our next inquiry would naturally be, to what extent the great First Cause has been immanent and active in the orderly development of creation. Beginning pretty well back, if God had withdrawn after speaking the first stellar system into existence, would other unknown millions of stellar systems have come into existence? The answer seems apparent when we reflect that every stellar system is independent of every other and is itself a distinct creation center. He was still immanent and active, at least until the last sun was made. But after the fiat for the solar system had gone forth, did he withdraw to the shades after enduing matter with inherent power to produce the phenomena that have since appeared? The question may come closer home. What is his relation to the universe now? Has He withdrawn to

the shades after enduing matter with inherent power to produce phenomena? The question may appear with more distinct outlines in the form, "What if God should die?" There are forces in existence now, would they continue to operate? The sun exerts an inconceivable power over the planets that revolve around it. What is that power? Men call it gravitation, but that accounts for nothing. Naming a phenomenon does not explain it. If God should die, would the sun continue to exert that force? Would other suns? Would any matter still retain the power over adjacent matter that it now has? Would force known as heat exist, or light, or electricity? Would the X-ray manifest its power? These questions might be continued through the catalogue of more subtle forces, cohesion, crystallization. The forces that regulate the action of particles of solid matter, as, for example, of steel, would they continue to operate? It may be that the very existence of matter itself depends upon the persistence of force or forces. Would any forces remain in operation if God should cease to exist? Would there be anything material, would anything of any nature or even space itself remain? Some would answer these questions instantly in the affirmative. But after all that answer may not be correct. Whatever may be the answer there is an orderly succession that suggests cause and effect, and if the power to produce effects inheres in the nature of matter independently of an exterior great First Cause, it exists there because an intelligent and infinite First Cause has placed it there.\*

---

\*Note the opinion expressed by Sir Oliver Lodge, that "the existence of a great World-Soul is the best explanation of things as they are."

This may seem a dogmatic assertion. But with all due deference there is no use in mincing one's words and hesitating and expressing doubt upon this point. A modern iconoclast has tried to prove by *a priori* reasoning, or in some other way, that the Chinese wall is only the figment of imagination, that really there is no such thing. Suppose some intelligent European had lived for twenty years within sight of it, had walked upon its top, had noted its towers and had traced its course for hundreds of miles, would it be necessary for him to speak doubtfully, or, out of deference to the opinion of one who had never taken pains to inform himself, say "I may be mistaken. I may have dreamed that I lived in China for twenty years, or I might have been mistaken when I thought I saw it, or have been laboring under a hallucination when I imagined that I was travelling along its top. It may be that the thousands with whom I have talked and the millions whom I know to believe in it as a fact are mistaken.

"At least out of deference to the opinion of one who does not believe in it, we must be careful not to be too dogmatic in our assertions concerning it. I have never traversed the whole 3,000 miles of its course. I do not know the composition of all the stones that enter into its construction. I do not know the cause of the fissures it crosses or the precipices it scales. I was not living in the reign of Shi Hwang-ti who is reported to have caused it to be built. In fact I find there is so little about it that I do know that I may be mistaken in it all."

There is no call for any such concessions to the ignorance of one who has complacency in his ignorance and will not take pains to inform himself. Of course the answer some will make to this line of argument is that

the Chinese wall is an object of sense perception, while God is not. True, but the cognitions which are brought to the soul of man by perception are not material. And the only function of the senses is to bring intangible and non-material cognitions to the soul. But there are cognitions that are not conveyed through these channels. The sense of smell brings cognitions of things that are responsive to the sense of smell, so of sight, taste, touch. But these cover but a small range of cognitions. The cognition, "I am" does not come to one in that way. The cognition "God" need not, and both may be equally well known as facts. One may say "*ego sum*" without hesitating or making concessions to the Gnostic philosophy, and any such concession even would not relieve the situation. One may say "*Deus est*" with as little call for concession to one who doubts the fact. "In the beginning God" is the corner stone of the rock foundation in Gen. I., for exact science as well as for revealed religion.

#### DESIGN IN CREATION

Admitting the fact that God is and that God created and made, the question is asked, did He have design in making the worlds and the things in them? Are parts designedly placed in certain relation to parts for a designed result or for a purpose that would not have been served by accident? The question does not differ in kind or degree from the same question concerning a steam threshing machine. Admitting that some one made the machine is it likely that there was a designed construction and adjustment of parts for specific ends or are the different parts of one machine fortuitous collections of matter assembled by some other fortuitous circumstances? Such a question needs no answer. Neither does the former save for a strange mistiness of conception



or confusion of thought that takes everything for granted. And when one argues for design in nature, the argument usually proceeds about as one might proceed in arguing for the manifestation of design in a steam threshing machine. "This is evidently not the result of chance, for the belt is just long enough and none too long to convey motion from the belt wheel of the engine to the cylinder in the machine that threshes the grain." The complex mechanism of the boiler and engine and their adaptations to each other as well as the still more complicated separator with its thousands of parts all constructed with reference to the purpose they are to serve and adjusted to each other so as to secure the desired end, all these are taken for granted. They come as a matter of course and do not need to be accounted for and we need not look into them for evidence of design. But there is design in every part and manifestation of design pervades the whole of these structures, even to the smallest bolt, screw, nail or curiously shaped fragment of wood. These things, thousands of them, are to be taken into consideration as well as the length of the belt in arguing for design as manifested in their construction. It is so in nature. One might argue for design in the human body because the pneumogastric nerve rises near the seat of life in the base of the brain and proceeds to the organs in the body most closely connected with and necessary for the life of the body. One might say that design is manifested here because if the functions of the vital organs had depended upon nerves issuing from the spinal cord at its nearest point an injury, so likely to occur, to the spinal cord would necessarily prove fatal. An injury is less likely to occur to a nerve situated entirely within the body than to one near the outside, like the spinal cord. So

design is manifested in the human body in this arrangement. The argument would be correct as far as it went. But it would be about as exhaustive as an argument from the length of the belt would be for design in the case before mentioned. There is design manifested in the position of that nerve. There is design in its construction so that it conveys just the messages from the brain that are needed for the action of those vital organs. There is design manifested in the great sympathetic system of nerves and in its almost total independence of the cerebro-spinal system. There is design manifested in the construction as well as in the position of the optic nerve, so that it conveys impressions produced upon the retina by light. There is design in the construction of the auditory nerve so that it responds to vibrations of the tympanum. There is design manifested in the construction of nerves so that some fibres convey messages of sense and others of motion. There is as much design in the eye itself as in the telescope, in the ear as in the phonograph. There is design manifest in the construction of the lungs so that by endosmose oxygen may pass into the blood and by exosmose carbonic acid may go out. There is design manifest in the construction and ramifications of the tubes themselves as well as in the gas or water pipes of a great city. The list might be extended indefinitely, for there is not a portion of the animal frame as large as a pin's head but what is as complicated in its construction as a watch, so far as the human maker is concerned, and contains as much evidence of design. It is so of every fragment of the vegetable kingdom. It is so of every fragment of the mineral kingdom. We do not realize it because of the limitations of our knowledge concerning them. But in the final analysis, a grain of sand with the



ultimate atoms composing it, their forms, their nature, their responses to the action of forces that keep them together and that cause them to assume certain shapes, their own activities among themselves, their adaptations to each other and to the universe at large, these with other circumstances connected with it make a grain of sand as complicated in its structure and to contain within itself as much evidence of design as the most complicated machine of human contrivance.\* There is design manifest in the infinite vastness of the stellar systems. There is design manifest in the infinitely small. But the answer of some to the foregoing is of course known. These things come in the course of nature. In the mineral kingdom they are formed by forces operating in the inorganic world. In the vegetable and animal kingdoms they grow. With some that answer is sufficient and satisfactory. It is the Topsy philosophy, "There didn't nobody make me, I growed." But in the light of the absolute, the positive knowledge that "God is," "God created," "God made," there is a profounder wisdom than the Topsy philosophy. These things are made, they are made for a purpose, they are made from design.

With reference to the wonderful formation of even so apparently simple a thing as a grain of sand or a drop of water note the following:

#### AN ATOM

"Atom" means something indivisible, but the chemical atom has belied its name. The atom of hydrogen, the smallest and lightest of them all, is now believed to be made up of about seven hundred "electrons"—a name given to the ultimate particles of matter, each of which is charged with electricity.

There is, perhaps, no grander conception of the constitution of matter than is that set forth in a recent lecture by Sir Oliver Lodge, one of the foremost men of science of our time. He asks us to consider an atom of any element as an infinitely little solar system. If the electron be conceived of as having the size of the full stop at the end of this sentence, the size of an atom of hydrogen will be that of a church one hundred and sixty feet long, eighty feet broad and forty feet high.

Less than a thousand electrons occupy the atom, in the sense that an army occupies a country. They prevent anything else from entering; they make the atom impenetrable, although they do not fill a trillionth part of the space with their actual substance. The electrons are in violent motion among themselves, having a speed probably one-tenth that of light—thousands of miles a second.

Yet there is little danger of collision, for the electrons are much farther apart in proportion to their size than are the planets of our system. Thus, says Sir Oliver, we have come to an atomic astronomy, and he suggests the amazing thought that there is no such thing as absolute size, and that even solar and star systems may be the atoms of a larger universe.

It seems a contradiction in terms to speak of the study of an atom as a means of broadening the mind; but where can one find a higher flight of the fancy than in the idea of that atom as a sphere of motion at a speed which the human mind can hardly conceive?

### CHAPTER III

#### *The Origin of Life as Described in Genesis and Recorded in the Rocks, Continued*

##### MODAL EVOLUTION

WE next consider Evolution as Modal. This is, of course, the theory held by all Christian evolutionists. In attempting to study evolution, it is unfortunate that there should be so much confusion or at least so great a variety of thought in one term. It would help clarify the subject if we were to use at least two terms for different thoughts, as "development" for processes that take place according to what we know as the laws of nature, e. g., the hatching of an egg. The term "evolution" should be reserved for those processes that involve at least as much as the transmutation of species.

It may be further stated that a consideration of this subject can be carried on mainly without theological bias. Except where the hypothesis is carried to the extreme of morals and religion, it affects religion only indirectly and incidentally rather than directly and necessarily.

To what extent this influence may be injurious owing to the limitations of human nature we will not now consider. We will here say only that it touches religion contingently. Turning now to organic evolution, what is the fundamental idea? According to Huxley, life originated in undifferentiated protoplasmic matter which by its inherent power became endued with life, of the lowest form, and then by a constant succession of transmutation of species has passed into higher forms and has finally

produced mankind. Quoting his own words in speaking of this process he says, "In all this vast progression there would be no breach of continuity, no point at which we could say, this is a natural process, and this is not a natural process, but that the whole might be compared to the " 'hatching of a chick from an egg.' " "That in fact is what is meant by the hypothesis of evolution."

The question then arises, did all life spring from one protoplasmic cell or were there two? If two, one for vegetable and one for animals, why not more? That is the question to be settled by the evidence.

Referring to the stellar system, as I have before intimated, there must be as many creation centers as there are fixed stars and of these there are at a conservative estimate 50,000,000. Now if there are 50,000,000 creation centers in the stellar universe, is there any inherent improbability that there were more than one, two or a dozen such centers in the animal and vegetable kingdoms of earth? The nebular theory, if true, only illustrates the development of an individual life and not that of even a species, to say nothing of a series of transmutations of species.

In organic evolution, then, we must begin with the question as to the evidence that all forms of life began with one low form of life and if so, what? If from two, one vegetable and one animal, what are the results? No definite opinion, so far as I know, is generally held. Huxley attempts to trace man back to the sea squirt, but was that the original form? No. There is not a naturalist or geologist who would admit that, for that is a high form of life compared with many others. The earliest fossil remains so far found are those of animals. But animals would not give birth to plants or, if they did, it would be

a downward rather than an upward movement. Without doubt the first forms of life were vegetable of which no traces have yet been found.

About the earliest vegetable forms known were those of the algae or sea weeds. But during the geologic ages that species has remained essentially unchanged and abounds today in forms the same as those of the earliest specimens yet found. Now if some algae parents begat algae offsprings, so to speak, and have continued to do so throughout the ages, is it probable that other algae parents begat offspring of some other species and these begat other species still and so the thousands of species of fossil and living plants have been produced? But another fact confronts us. Of late the science of bacteriology has been coming to the front. Students of that science have reason to suppose that there are as many varieties and species of microscopic vegetation as of the larger forms which we see around us.

Have they all a common ancestor? And if they are all the terminal forms of an upward movement that has been going on through all the geologic ages, from what did they begin? If there has been an upward movement through all these ages, it is incomprehensible that we should have existing at the same time, in the same habitat, thousands of forms of life from the microbe, or the mould, to the sequoia or big trees of California. If evolution in the vegetable kingdom has been a general law, it must be exceedingly uncertain and capricious in its operations.

But we are told that it is not, cannot be a general law. We hardly need to be told that, but, if it is not general, how restricted is it? and if not universal how are we to determine the nature and extent of its restrictions? An assumed law that is so variable and capricious in its

operations, with so many unknowable restrictions in itself, could hardly seem to form the basis of scientific knowledge.

Precisely the same is true of animal life. We have microscopic forms of animal life as well as of vegetable life. And we have today all of the practically infinite varieties of life existing at the same time, life from that of the microbe that produces diseases of the animal frame to that of the elephant, forms of life from the parasite of the microscopic insect to man, all being in the same habitat, and yet exhibiting such variety. It is difficult to conceive a law that would be as capricious in its operations as that. I speak of microscopic insects. They are not mentioned in evolution, but they are facts to be accounted for the same as elephants. Have all come from the same starting point? If we have to admit that there must have been a few separate starting points why not admit more, enough in fact, to obviate the necessity of assuming transmutations of species?

But confining ourselves to the large animals. Haeckel assumes that it has taken 1,000,000,000 years for men to evolve from the lower vertebrate animals. But they do not carry us farther than one-third at least of the way back to the first forms of life. However, assuming that as the full period of animal life on the globe, we have the eozoon (first form) standing for a thousand millions of years as a monument to fixity of species, for it exists today as it did in the eozoic age. If other forms of life have come from it, we have the phenomena of some eozoon parents producing eozoon offspring in unbroken succession for that length of time while other eozoon parents gave birth to Polyps, Acalephs, Echinoderms, Acephala, Gasteropoda Cephalopoda, worms and so on in endless



variety through the great classes of Radriates, Mollusks and Articulates, and all existing in the same waters and at the same time. Then upward with the vertebrates with their countless species to the highest ones. All of these varieties, according to the hypothesis, have taken place in the descendants of some eozoons, while some were continuing absolutely without change.

Of course we are familiar with the evolutionists' explanations, that natural selection, survival of the fittest and other factors produce different conditions. But the conditions are such that the original eozoon lived and multiplied. What was the necessity of its begetting trilobite offspring? And their conditions were such that trilobites lived and flourished and have done so to the present time. What was the necessity for them to beget Aroncolae or Paradoxide offspring? These questions could be repeated of thousands of different species all living contemporaneously, in the same waters, with the same food at their disposal, the same environments in every respect. What need that one species should beget another species to adapt it the better to its own home? "Survival of the fittest" is another theory to account for the phenomena. But it accounts for nothing, for fit or unfit, the original forms survive for millions of years in the same habitat as their supposed offspring. Parthenogenesis also comes in to help out the explanations. But the fact, if it be a fact, that one sex in some moths and some bees have offspring without intercourse with the other sex explains nothing. All these causes or modes of evolution are so utterly inadequate to account for the phenomena that many evolutionists abandon them entirely and seek proof of evolution, without reference to cause or mode, in Embryology.

It is observed that the human embryo passes through stages in which it somewhat resembles some lower forms of life. It is hence inferred that it gives a history of the development of the human race from the lower animals. But there must be some stages of development in which the human form is not perfect. It is so with the oak—with every form of life. The doctrine of epigenesis was never sustained by any observations of nature. But without discussing this phase of the question further, it is apparent that this similarity accounts for nothing. If it be an analogy to the development of the human race then the records of that development would appear in the rocks. The same may be said of the argument from atrophied or rudimentary, or more properly, vestigial appendages. They prove absolutely nothing. They may suggest lines of inquiry, but anything to sustain such theories must come from the records in nature—geology. In any form of development that is worthy of a separate name, transmutation of species must have occurred thousands if not millions of times. But there is not a particle of evidence anywhere that it ever occurred even once. Mr. Etheredge in charge of the Natural History department of the great British Museum, has plainly said, "In all this great museum there is not a particle of evidence of transmutation of species." No scientist, whether evolutionist or not, has ever known of an individual case, nor do they pretend to. They are still hunting for a single specimen, but billions of them are required. The transition of one species to another is supposed to have taken place by a gradual differentiation from a lower to a higher form, and evolutionists claim that billions of years are sufficient to account for the change. But first they haven't billions of years to work in, for, as has been

suggested before, in the chapter on Suborganic Evolution, the sun is of such recent creation that it has not yet had time to so equalize its own motion, but that the exterior is still flowing around a more slowly revolving core. The same is more strikingly true in the planet Jupiter. And with reference to these long periods in general, the longer the time the weaker the argument; for the greater should be the number of transitional forms, and not one has ever yet been discovered.

Let us bring out the force of this argument by a specific case, that of Huxley's "Demonstrative Evidence of Evolution." In this he gives the pedigree, so to speak, of the horse, according to specimens by the late Prof. Marsh of Yale, which are now in the museum of Yale College.

These specimens are the remains of the *Orohippus*, found in the eocene period; then in a rising scale there are the *Meshippus*, *Miohippus*, *Protohippus*, *Pliohippus* and *Equus*, or horse, as at the present. The eocene period takes us back about one-third of Haeckel's billion years to the first vertebrates. Say then for convenience that the *orohippus* lived three hundred millions of years ago, and as there are five stages to reach the horse we may assume as his figures that from one form to the other was 60 millions of years. How many transitional forms might we not expect to find for each terminal one? Allowing five years for the young to become parents—and in the early forms probably one year would suffice—and there would naturally be 12,000,000 intermediate forms between each fixed pair, and yet not one of them has ever yet been discovered. This only illustrates one gap where there are tens of thousands of them. To meet the difficulty Darwin and Huxley simply say, "We should not expect to find any." But I should. Why not? Why

might we not expect to find a few of the 12,000,000 intermediate forms in this gap as well as in every case the one or two at the extremes? Huxley meets it as every evolutionist meets every difficulty, by the imperfection of the records and by stating that in two cases an apparently intermediate species has been found in two very wide gaps. But, with reference to the imperfection in the rock records, in hundreds of cases the records in the rocks are sufficiently perfect to establish the fixity of species for a large portion or the whole of geologic time. The *algae*, for example, from the time that we have any traces of vegetation have remained unchanged. The records in the rocks are perfect enough to establish fixity of species for them all through the geological ages since vegetation first appeared on the planet. Several other vegetable species and many animal species for the same or nearly the same length of time have remained unchanged.\*

But suppose the transition from one species to another to be abrupt, one species producing another or next higher without transitional forms, then we should have the phenomenon of one species remaining fixed for an inconceivably long period of time and then at once bringing forth another species. As for instance, taking Haeckel's large figures we should have the *orohippus* remaining fixed for some 20 to 60 million years and then, just as the *eocene* merged into what we may call the *mesocene*, some *orohippus* parents brought forth *mesohippus* offspring, which again maintained an absolute fixity of species for another period of from 20 to 60 million years, when again some *mesohippus* parents brought forth *miohippus* offspring and so on through the series.

---

\*See appendix (g).

According to this theory each species would have preserved an absolute fixity for millions of years and then at once some parent in that species suddenly begat offspring of another species. It would naturally seem as if these millions of years were enough to establish fixity of species in each case and if another species appears at the end of one of these periods, it must be accounted for in some other way than as being the offspring of antecedent species that has been fixed so long.

There seems to be a mistiness of thought in some circles as to cause and effect. We used to read in our school readers that "Great effects result from little causes." As a match could set fire to a city, a little break in a river dam cause an overflow and so on. In the sense in which the writer used the words he was correct, for he referred only to the fact that some small forces could direct or release greater forces that were sufficient to produce the effects, while in fact admitting that no effect is ever produced greater than the sum total of the forces operating to produce it. A little girl some years ago touched an electric button and the bed rock under the Hell Gate in N. Y. harbor leaped from its resting place in millions of fragments and the waters above were for a moment converted into a boiling sea of foam. But the ounce of force exerted by Gen. Newton's little girl was not the efficient cause. It was not a great effect from a little cause, because every pound of force manifested in effect was the result of a pound of causing force behind it. The little girl's touch only released forces that were sufficient to produce the effect.

So in every case. The final result is but the measure of the cause that produced it. This statement is just as true with reference to the potentiality of the protoplas-



mic cell. There are millions of such cells in existence now, each one capable of receiving its life principle only from its own peculiar source, and then its potency is confined to development only along its own peculiar line. The protoplasmic cell on an incipient corn cob cannot be fertilized by the pollen of the rose. It must be fertilized by pollen from the corn tassel and then it will appropriate the nutriment brought to it by the parent stalk and it can develop only into a grain of corn. Others will receive their life principle from other sources, but each one from its own and exclusive source and will develop it along its own line.

Now to endue the little aggregate of protoplasmic cells in the germ of algae with potentiality to produce a sequoia would be equivalent to the creation *ex nihilo*, of the sequoia. To endue a polyp with power either directly or indirectly to produce an elephant is equivalent to producing an elephant. To endue a sea squirt with power to finally develop into a man would be equivalent to the creation of a man. Yet how easy it is for the imagination to endue the ovum of the orohippus with the power to produce the mesohippus or any other form. And how easy it is for men in imagination to endue the "slimy ooze of the early sedimentary deposits"\* with power to produce all the varied forms of life that have existed since. But in every instance the enduement of such power would have been equivalent to the creation of the resultant forms.

But with reference to the "Demonstrative Evidence of Evolution" one question is whether the movement is upward or downward. The horse is larger than the oro-

---

\*See appendix (h).



hippus but not necessarily more highly organized. If size be the measure of development, then the summit of evolution was reached ages ago and we are now on a down grade, for the largest forms of life existed long ago and are now extinct. But if the eohippus begat the orohippus, the orohippus the mesohippus, etc., is it an upward or downward movement in animal organization? There is increase in size, but the atrophying of parts, the extinction or leaving but rudimentary of four members, leaving but one instead of five, could as legitimately be considered degeneration\* as evolution.

If some Nordeau, advocating degeneration in the animal world, should use that as an illustration it would have as much force.

But another very common argument is that we see the process of evolution going on around us every day. The egg hatches a tadpole, the tadpole evolves the frog, and so on.

We could accept the theory if men would confine the meaning of the term to what is proven by that means. But when it is admitted that an egg can evolve a chick or that the hatching of a chick is a process of evolution, the term evolution is immediately extended so as to embrace an entirely different idea. The process is something like this. If an egg can evolve a chick, evolution is established. But eggs have repeatedly been known to evolve chicks, hence evolution is established. But evolution means that a single protoprosmic cell has, by a process of multiplying forms through an indefinite number of species produced all the forms of life that have existed on earth.

---

\*Appendix (i).

This conclusion or any part of it more than that an egg can produce a chick, involves a logical fallacy that ought to be seen even by one who has never studied logic.

But one of the greatest practical difficulties with any theory of evolution is the existing condition of things. If the organic life of today be the outcome of any process of evolution, how is it that some of the primitive forms have remained through all the geologic ages entirely or practically unchanged? Others have changed but very little and all have produced very capricious results. Why is it? We have microbes that produce diseases in men and we have elephants. Have all evolved from the same protoplasm? If so why are they not on something of the same plane now? We have thousands of species of microscopic plants and animals, thousands of species of aquatic and thousands more of land animals from the eozoon to man. Why is it that some have made no advance at all, others have reached the highest conditions as man, and all have stopped just where they are? We have microbes, infusoria, and thousands of other members of the animal kingdom. We have still the ovum, wiggler gnat, ovum wiggler gnat, repeating the same small circle of existence after all the geologic ages have given them time, but still the circle is unbroken. How long will it take to get above that condition? We have ovum, tadpole, frog, repeating themselves in the same small circle with the thousand million years, so often quoted, behind them and still they get no farther. We have all of the thousands of species of larger animals with only a very few near the head. If advance from the lower to the higher forms of life is a general law of nature, why is it that we have the very lowest forms still, and the highest with all of the intermediate forms still in existence?

Whether the differentiation has been by natural selection, survival of the fittest, parthenogenesis or any other means, there must be continual creation of the lower forms to supply the advancing masses, as in college there must be freshmen classes to supply advancing and graduating ones.

But some admit that the law of evolution cannot be a general one. If not, then how general or how special is it? If we admit that it is a special law for only a few lines of individual succession, there is no force at all in a general argument, and we are at once thrown upon the proofs for each specific case. If in the hundreds of thousands of species of plants and animals now in existence there has been transmutation of species in only a few instances, the strength of the presumption in favor of those exceptional cases is greatly reduced.

There is a vast number of species of living things now in existence—for convenience, we will say 100,000, though there are doubtless more.

Now if the supposed progressive upward movement has characterized only, say, a couple of independent lines of individual successions, while the remaining 99,998 have remained without transmutation, the presumption is very strong against the supposition of transmutation in those two exceptional cases. This presumption is the stronger because even in these two instances there is not a particle of evidence that transmutation has occurred. It may be urged that there is such evidence in the case of a horse. But there is no evidence whatever that the orohippus was the progenitor of the mesohippus nor that the mesohippus of America was the parent of the miohippus of Europe. The presumption is in favor of the theory that they were independent of each other, and the

presumption is strengthened by the fact that closely allied forms have been found that are not considered to be in the line of succession at all, as the *Anchitherium* and *Hipparion*. So far as any proof is concerned, the evidence is that there were several closely allied species existing, some contemporaneously, some successively, but no one derived from another, as there are many such existing today, as in the case of monkeys and apes, closely allied but not derived one from another, as the geologic records show from the first that have appeared.

The other case in which transmutation is insisted upon, whatever else in the theory must go, is that of man.

Whatever else must be yielded in the theory of evolution, it is most strenuously insisted that man has been evolved from lower orders of animals. Still there is not a particle of proof, nothing but presumption; and the presumptive evidence is greatly weakened by the fact that nearly all of the species through which he is supposed to have passed are still in existence. It is difficult even to suppose a line of descent through the various species of vertebrates for man's descent, for no line seems to be suggested but what is soon abandoned. But whatever line we take, some parents must have brought forth young of their own species, while other parents must have brought forth young of another species, for the various species have preserved their own separate existence while supposedly furnishing an upward succession. But such a presumption is too violent to be scientific, if not too violent to come within the bounds of reason. Even admitting that through some unknown line of individual, not general, succession man has been evolved by gradual differentiation, there must be millions of intermediate fossil forms, while scientists are vainly looking for a

single link to prove evolution. But to prove the theory in general, billions of them should be found. To prove it in the single case of man would require hundreds of thousands. Transmutation of species must have occurred thousands of times even in this one line, and yet not in a single instance has it ever been observed, nor would it be admitted to be possible, for no experience or experiments have shown it to be possible, except for the necessity of sustaining a theory that in the minds of some must be proven at all hazards.

The superintendent of the department of Natural History in the British Museum referred to and in part quoted before, declares: "In all this great museum there is not a particle of evidence of transmutation of species. Nine-tenths of the talk of evolutionists is sheer nonsense, not founded on observation, and wholly unsupported by fact. They adopt a theory and then strain their facts to support it. I read all their books, but they make no impression on my belief in the stability of species. Moreover the talk of the great antiquity of man is of the same sort. There is no such thing as a fossil man. Men are ready to regard you as a fool if you do not go with them in all their vagaries. But this museum is full of proofs of the utter falsity of their views."

## CHAPTER IV

### *The Science of Geology, Confirming the Records of Genesis I*


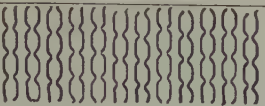
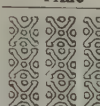
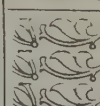
**W**E refer again to the records in the rocks as confirming the records in Genesis. As before stated, Genesis seems to teach that plants and animals brought forth after their own kind or species and not after some other species. We read with reference to vegetables, (Genesis 1:11, 12), "And God said, let the earth bring forth grass, the herb yielding seed and the fruit tree yielding fruit after its kind, whose seed is in itself, upon the earth; and it was so."

"And the earth brought forth grass and herb yielding seed after his kind, and the tree yielding fruit, whose seed was in itself, after his kind; and God saw that it was good." Also in reference to aquatic animal life [Genesis 1:21], "And God created great whales, and every living creature that moveth, which the water brought forth abundantly after their kind, and every winged fowl after its kind, and God saw that it was good." Then as to land animals, verse 25, "And God made the beast of the field after his kind, and cattle after their kind, and everything that creepeth upon the earth after its kind; and God saw that it was good."

It may be urged with reference to animal life that it is not said that they brought forth after their kind, but it is distinctly stated that God "created" or "made" them after their several kinds or species. But of vegetables it is distinctly affirmed that they "brought forth after their kind." And of animals it is an inference so strong that



it is safe to say it never would have been questioned except as necessary to sustain some other theory. There is authority for this view that ought to be considered high by those who would entertain those other views. Charles Darwin never hesitated in his belief that Genesis first taught that in every instance the creation form was the terminal form. He believed that Genesis was wrong and that his theory of an upward movement through transmutation of species was correct. It was the persistency of this idea, i. e., that Genesis was wrong and he was right, that occasioned him finally to lose faith in Genesis, in the Bible as a whole, in God and revealed religion, and to die a practical unbeliever. It may seem a premature statement, but it is undoubtedly true that in future years, when the truth becomes more clearly seen, the greatest lesson that Darwin has taught the world is the involuntary testimony his experience bears to the unity, integrity and absolute truthfulness of the Scriptures. But it is not for us here to decide which is correct, his view of the teaching of Genesis first as to the stability of species, or his theory as to their transmutation from one into another in an upward series. He is cited here only that his high authority may confirm the commonly received idea that Genesis first teaches the permanence of species, and that in every case the creation form is the terminal form. This latter view seems to be the teaching of geology without the shadow of dissent. To show this clearly to the eye we have here represented some of the strata of the earth, as the Laurentian, Huronian, Cambrian, Silurian, Devonian, and so on, up to the Modern; the divisions of time, also, as Eozoic, Paleozoic and Neozoic. The perpendicular lines represent some of the species, and their length represents approximately the

Ezoic Time	Paleozoic Time	Mesozoic Time	Neozoic Time
			
Laurentian	Huronian Cambrian Silurian Devonian Erian or Carboniferous Permian	Triassic Jurassic Cretaceous	Eocene Miocene Pliocene Post-Pliocene Modern

Eozoon Animal Species from Eozoic

Algae Plant Life from Eozoic

Cedar  
Poplar  
Oak  
Tulip  
Willow  
Spice-wood  
Sassafras  
Walnut  
Buckthorn  
Sumac  
Cinnamon  
Apple  
Fig  
Plum

500 Species of Trilobites

Archeopteryx—Bird in Jurassic Period

900 Species of Ammonities

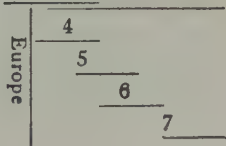
700 of Ganoids from Paleozoic Times, some of which extend to present

450 Species of Nautilus from Silurian, some extending to the present

1. Orohippus
2. Mesohippus
3. Horse—extinct species found by

Darwin in Pleistocene

4. Miohippus
5. Protohippus
6. Pliohippus
7. Equus of present



geologic ages during which they have or did bring forth "after their kind." In the vegetable world, for example, we have the algae, that from Eozoic to the present, whether the terrestrial years be a thousand, a million or a thousand millions, have "brought forth after their kind." The species has remained fixed through all the ages since it first appeared. The same may be said of some other species.

Some lines represent the persistence of other species from the carboniferous period—cedar, poplar, willow, oak, fig, tulip, spice-wood, sassafras, walnut, buckthorne, sumac, cinnamon, apple and the plum. Whenever you look at one of these common trees you have evidence of the truthfulness of the record in Genesis, "They brought forth after their kind"; for from the early geologic age, or for some say 5,000,000 years, they have invariably and unvaryingly produced their species, brought forth "after their kind," as stated in Genesis 1:12. In the animal kingdom a long line represents the persistence of Eozoon, which has brought forth after its kind from the earliest time that animal life appeared upon the globe. We need not refer to years, for, whether thousands or millions, it has reproduced its species—brought forth after its kind—during them all. But many species are so numerous that we have to let one line represent a hundred species. Note five lines representing five hundred species of trilobites, that through the unknown ages of the Paleozoic time brought forth "after their kind" without even a hint that a single individual of any species ever reproduced anything but a trilobite "after its own kind." Note nine lines representing nine hundred species of ammonites, which brought forth after their own kind through more or less of Mesozoic time;

also lines representing four hundred species of nautilus that, while they existed, brought forth only "after their kind," without the slightest trace of ever having deviated from that rule. Again there are seven hundred species of the ganoids of which the same may be affirmed.

To represent each species of plants and animals by lines an inch apart we should have to extend the chart to ten miles in length instead of one foot. In that chart every line an inch apart for ten miles would represent a species that so far as known has reproduced its own species—brought forth "after its kind," as Genesis declares.

To illustrate the supposed genealogy of the horse, instead of lines six inches long representing the fixity of some species through all geologic time, five lines each a fraction of an inch long represent species that are supposed to have passed from one to another in an ascending scale. Men have guessed that in the last fraction of geologic time, the modern period, the orohippus merged into the mesohippus, and so on. In other words, the orohippus did not bring forth after its kind, but brought forth of mesohippus kind; and that the mesohippus of America brought forth the miohippus of Europe, and this brought forth the protohippus and that the pliohippus, and this the equus. But there is not the slightest evidence that one of these forms was the direct descendant of any of the others—it is mere supposition. So far as anything is yet known, every plant and animal has brought forth after its kind.

To quote from an address of the author's on "The Scientific Accuracy of Genesis I," an abstract of which was recently published:

"The same holds true of the fancied descent of several

pachyderm animals from some primal ungulate in the earlier strata. The supposition is that some one species in the past was directly or indirectly the parent of several lines of hybrids, or mongrels, and finally developed into the tapir, elephant, rhinoceros, and so on. But there is not the slightest evidence that that has been the case. Science refers to what is known, and I am speaking of Science and Genesis; and so far as anything is known, the rocks confirm the records.

“But the most curious thing in connection with this theory that plants and animals have not brought forth after their kind is the supposition that if a species can be found that is closely allied to some other species, the fact would prove that those other species have merged one into another. An eminent English man of science once supposed that the discovery of two species in wide gaps between other species proved that one of those species had merged into the other, and, inferentially, that all of our ten miles of parallel lines had come from some, perhaps, single line; or at least from a very few.

“So, of the connection between the anthropoid apes and man. The idea seems to prevail that if we can discover even a single specimen of an, as yet, undiscovered species, existing between the ape and man, that this discovery alone would prove that man sprang from the ape. But, in fact, it would not prove that assumption any more than the discovery of Eros proves that Mars once traveled the Earth’s orbit, and that all of the planets have been splashed off from the surface of the sun. The similarity is very close, the cases are parallel, but to show it would require a discussion upon which we cannot enter in a single evening’s address. I can only repeat that so far as science, as opposed to conjecture, is concerned,

everything in the records of creation confirms the written records in Genesis I.

“It is maintained that the records in the rocks are so imperfect that it may yet be proved that Genesis is wrong. But these records are perfect enough to establish the fixity of species, in some instances through all geologic time, and in thousands of other cases through all of some geologic periods or large portions of them. In establishing Genesis the rocks are not at fault. It is only when we wish to prove that Genesis is wrong that we have to appeal to the imperfections in the geologic records. But so far as science—that which is known—is concerned, without the suggestion of dissent, the rocks confirm the records of Genesis I.

“Add to this the fact that a transmutation of species has never been known to occur in geologic or modern times. The invariability with which each produces “after its kind” suggests a law of necessity that this must be the case.

“Add to this the admission of Darwin that if design is manifest in the universe, or that if anything exists except for utilitarian ends, the theory opposed to Genesis is false.

“Add to this the universal barrenness of hybrids and the constant tendency to revert to type, and many other considerations of the same kind, and we have a portion of one line of argument—where several exist—in favor of the correctness of the statement that each plant and animal produces ‘after its kind.’ ”

Indefinitely more might be said along the same line, but enough has been said perhaps already to make it pertinent to raise a question here. Is it scientific to assume that all this mass of evidence must go for nothing,



and that the truth is found in a theory of phylogenetic zoology that is rapidly losing ground in Europe?

Upon the side of permanence, fixity of species, we have the testimony from the records in geology without the suggestion of dissent, confirmed by the statements in Genesis I, as commonly understood and as interpreted by Darwin. Upon the other side we have a few vague analogies or inferences, some of which point one way and some another, e. g.: The little caruncle in the corner of the eye is claimed as evidence that man has descended from some nocturnal bird, while the vermiform appendage is claimed as evidence that he descended from some marsupial quadruped. Is it scientific to assume that all of the evidence for permanence of species, a little of which has been cited above, is to go for nothing as outweighed by a few analogies, inferences and speculations which have no facts to sustain them?

But here again we are confronted by the difficulty of attaching a clear, definite, tangible idea to the word evolution, and nothing can be said upon either side of the question but what can be strained to support some one of the various theories of evolution. As one has said, "Darwin may be in error, Huxley may be wrong, Mivart may be wide of the mark, Haeckel may be mistaken, Cope may misjudge and Spencer be at fault, but evolution is a great and established fact." Of course, for one can not admit the existence of anything without admitting evolution if everything distinctive in the term is left out; but is it scientific to build upon the theory thus emptied of meaning the superstructures it could hardly sustain if all the ideas thus eliminated remained in it? Is it scientific to build the same superstructures upon the creative evolution of Agassiz, Gray, McCosch, Baden

Powell, the Duke of Argyll and others, as upon the atheistic evolution of some others? Is it scientific to rewrite sacred history so as to make it correspond with inferences drawn from an hypothesis that has nothing but imagination to stand upon? It may be urged, of course that there are facts upon which this hypothesis is based. There are indeed facts which are supposed in some measure to sustain the theory, but thus far the connection between them is purely imaginary, as before noted in the supposed genealogy of the horse. There are, as everyone knows, the remains of the orohippus, mesohippus, protohippus and so on, but what evidence is there that the orohippus did not appear as such and disappear without undergoing any modification of form? So of all the others. That the mesohippus is the lineal descendant of the orohippus, and so on, is pure imagination with the presumptive arguments of the known fixity of species against it. Farther, the remains of the Anchitherium and Hipparion—very similar in form—are not in the line of descent, and that some horses in the past were not so derived is apparent, from the fact previously stated that Darwin found and recognized the tooth of a horse contemporary with some of the earlier so-called progenitors of the horse. We do not claim these as positive proofs, but they certainly present a mountain of probability that one was not derived from the other, to offset the mere fancy that they were.

Again, the fact that certain forms of life appear that seem to be between the fish and the bird is assumed to prove that birds are evolved from fishes. But is there any evidence to show that any such forms have not existed as they now are from their first appearance to the present? Millions of other forms have so remained un-

changed; why not these? The presumptive evidence is all in favor of the supposition that these also have so remained, and there is nothing but a fancy that they are transitional forms between the lower and the higher forms of life. This presumptive evidence is immensely strengthened by the fact that fully developed, perfectly formed birds now exist and have existed for ages without a suggestion of variation, except when such variation has been forced by cultivation. Moreover the remains of perfectly formed birds have been found in as old formations as the Jurassic, and now there is so little suggestion of change in bird life that four hundred varieties of humming birds exist in one locality, of which some feathers would never be mistaken for those of another variety.

The *Balanoglossus* is supposed to be a connecting link between worms and the vertebrates. But we have worms now and vertebrates from the lowest forms to man. Is it probable that some worms millions of years ago produced *Balanoglossus* offspring, and they in turn produced vertebrate animals, and so on, while some worms continued to beget worm progeny to the present day? If probable, is the probability greater than the probability that like thousands of other species of animals it first appeared in its present form? The same questions may be asked concerning the *Bathybius*, and *Amoeba* that are supposed to be initial or transitional. Now is it scientific to base conclusions of the greatest moment upon imaginary connections of facts? To state the question is to answer it. Science is but the discovery of facts and the tracing of actual, not imaginary, connections between them. The Cape to Cairo railroad in Africa is approaching Victoria Falls from both north and south. When the two sections reach the river on opposite sides there will be the fact that

road extends north to Cairo and south to the Cape, but it will require something more than an imaginary bridge over the chasm to make it safe to run trains across. It would not be safe to attempt to run a train across an imaginary bridge, but it would be just as scientific to attempt that as to build vast structures of philosophy, theology and history upon imaginary connections with other facts.

Whatever the future may have in store, at present there is no actual connection between facts such as to warrant the vast structures that have been built upon the fancied relations between them. Is it scientific? Again I say to ask the question is to answer it. To call such proceedings science or scientific is to use the term in a loose, unmeaning, bastard sense that is a travesty on its real meaning and an insult to true science. It is because it has been so frequently abused that the term itself has become a stench to the truly scientific spirit. It is "science falsely so-called," and all of its contradictions to revealed religion are but "the oppositions of science falsely so-called."

And the same observations hold with increased force with reference to the recent adjustments of philosophy and religion to the supposition that man has developed from the lower animals. There are facts, of course, in embryology, facts in zoology and natural history, but the connection of those facts with any theory of such development is purely imaginary. There is a little caruncle at the inner corner of the eye, but that it is a vestige of a nictitating membrane and proves that man descended from a nocturnal bird is pure imagination. There is the vermiform appendix, but that it is vestigial of a greater and perhaps useful appendix, and proves that man has

descended from some marsupial animal is imagination. There is in the human embryo the "lanugo," but to suppose that fact to prove that primeval man was hairy and descended from some hairy animal ancestor is pure imagination. So of other fancied proofs. All that anything along that line can do is to suggest lines of inquiry, but if they point to facts the record of those facts could be found in the rocks. They prove nothing, and even suggest little in the matter concerning which they are forced to do such great service.

The caruncle of the eye may serve some useful purpose connected with the lachrymal duct, the vermiform appendix may have a function, as has been suggested recently, of lubricating the intestines. So of other vestigial organs. Men have never yet exhausted the resources of infinite wisdom, and purposes of use and beauty may be served by means of which we have as yet no knowledge.

With reference to the derivation of man the rocks are silent, for no trace of a fossil man has ever been found. But there is evidence regarding his derivation that should have weight. It is scientific to accept evidence. Very little of any man's scientific knowledge today has been of his own discovery. Nearly all of it has been taken from written or spoken testimony. It is scientific to accept well authenticated testimony. If it is not, Kepler was not scientific in accepting the evidence that formed the basis for his celebrated "Third Law." But he was right in accepting the evidence and correct in his use of it, for the principle of that law is demonstrable and has been demonstrated. It is scientific to admit evidence when the authority of the source has been reasonably established. Cosmogony and geology have established the terse, literal,



scientific accuracy of many statements in Genesis I. This fact should take its testimony out of the nimbus of vague, indefinite nebulosity that has enshrouded it. Its statements are clear, clean-cut, explicit and accurate, and entitled to a respectful hearing. What is that testimony?

“And God said let us make man in our image, after our likeness \* \* \* \* So God created man in his own image, in the image of God created he him; male and female created he them.” But of course we are met with the argument that this may be true, but he may have taken millions of years through transmutation of species in which to do it. Darwin did not so understand it. Geology absolutely confirms similar statements concerning vegetables and lower animals as Darwin understood those statements. If such evidence is to be assumed as false there is no foundation in nature for any science that has for its field of investigation the orderly succession of plants, animals or men from ancestors. If higher forms have been derived by gradual differentiations from lower forms, first, billions of transitional forms should be found for every terminal one that has been found, whereas not one has been discovered and, second, any divergence whatever outside of the limits of a clearly defined species would invalidate the testimony of nature as to the orderly succession of species, and make the result so uncertain that a science of zoology would be impossible. If on the other hand divergence comes by leaps or bounds as Darwin suggests as possible and illustrates by a diagram, that is, if a species may have brought forth after its kind for thousands of years or through an entire geological age and then give rise to a half dozen or even one different species the case as to the possibility of science is indefinitely worse. It would be like trying to



construct a science of astronomy where any heavenly body was likely to start off at any moment upon a different orbit or burst into a dozen pieces and each one pursue a different and widely distant orbit of its own. Anything like science would be impossible and all conditions of knowledge would be reduced to chaos. Is it scientific then to assume that all the evidence in nature and revelation as to fixity of species is to go for naught and that history, philosophy and theology are to be re-written in the interest of such chaotic relations?

Is it scientific to reject all the evidence of Genesis as to the origin of man and conclude that he has descended from an avis ancestor because in the corner of the human eye is a supposed vestige of the nictitating membrane of some ancient nocturnal bird, or from the horse because he has the platysma myoides of the neck, homologous with the useful panculus carnosus of the horse, or from the ass because he has some useless ear muscles while in that animal they are larger and useful, or from the ape because of the coccyx or from some other animal because of the lanugo in the embryo?

To call such proceedings philosophical or such processes scientific is to bring both terms into contempt. No wonder the partisans of such philosophy and science find a conflict between "science" and religion. We can exclaim with Paul, "Beware lest any man spoil you through philosophy and vain deceit, after the tradition of men, after the rudiments of the world, and not after Christ." Or again, "Oh Timothy, keep that which is committed to thy trust, avoiding profane and vain babblings, and oppositions of science falsely so-called, which some professing have erred concerning the faith."

In these few thoughts there has been no attempt to

sustain or overthrow any system of phylogenetic zoology, but to present some evidence and to raise the question, Is the balance of evidence in favor of any system of zoology involving the transmutation of species sufficiently great to be admitted as absolute truth or near enough to it to warrant the tremendous structures of history, philosophy and theology that have been based upon it as if it were absolute truth? We might raise another question, Is the balance of evidence such as to sustain any theory of organic evolution until the term is emptied of everything distinctive in it? If we take the term evolution and empty it of all the distinctive views of representative evolutionists of the past generation, it is sustained by all the evidence of geology as the creative evolution of Gray, McCosh, Baden Powell, the Duke of Argyll, of Dawson and Agassiz and many other firm believers in the inspired records. As the Duke of Argyll says, "It is as certain as any fact of history that creation has had a history. It has not been a single act done and finished once for all, but a long series of acts, a work continuously pursued through an inconceivable lapse of time. It is another fact equally certain respecting this work, that as it has been pursued in time so also it has been pursued by method. There is an observed order of facts in the history of creation, both in the organic and in the inorganic world." No one would deny this. It is but a re-statement of Genesis I, and there has never been any controversy over the term as thus defined, until the advent of men who would fill it with other meanings that have no warrant in facts.

Whatever may be the outcome of present discussions or future discovery, there is now no foundation in facts, logically connected, upon which to build any structures

that could not be based upon the literal and exact scientific facts recorded in Genesis I. Thus far that chapter is the rock foundation of exact science as well as of revealed religion.

We have thus considered some of the essential statements in the first chapter of Genesis, with some of their corroborative evidences in nature. There is a practically infinite probability that they are correct. At least they are indefinitely more probable than any theories that are opposed to their correctness. Ancient astronomy began to accumulate the facts upon which is established the probability that the earth at one time was "emptiness, vacancy." The modern sciences of astronomy, chemistry, optics, mathematics, spectrum analysis and others have brought that probability infinitely near to a demonstration. The primitive condition of the earth as "*tohu, bohu*" is as satisfactorily settled as if men had seen that condition with their own eyes, as indeed a similar condition may actually have been seen in the recent nebula around Nova Persei. This condition involves the necessity for creation, while the condition renders also more probable his declaration concerning creation. According to real science the fact of making implies a maker, the fact of creation implies a Creator. The first two verses in Genesis I are correct in their statements. The rest of the chapter to the appearance of life follows necessarily. There is every reason to believe that the statements as to the origin of life are correct. The first chapter of Genesis is the narrative of solid facts. It is a true foundation for every science affected by it, the rock foundation for revealed religion that is built upon it.

#### SUPERORGANIC EVOLUTION

A few words upon this subject may not be out of place here. Much of modern speculation is based upon the assumption that in the infancy of the human race men were of a very low order of beings and that there has been a gradual, steady movement upward, without assistance from outside himself, until the present civilization of Europe and America has been reached. Facts, however, hardly sustain any such theory. Archæology seems to indicate that the farther back we go in the history of the race, the higher the degree of civilization. At least, this seems to be the case in that part of the world that has been universally considered as the cradle of the race, as Asia Minor and Egypt.

The pyramids of Egypt show degeneration rather than advance. The oldest one is not only the largest but immeasurably transcends all the others in its suggestiveness, not to say, its teachings.

Ruins indicating a high degree of intelligence are scattered through Mexico, Central and South America as well as in the islands of the Pacific, and these latter are now occupied by the most inhuman cannibals and head hunters. The Chinese have deteriorated from what they were 2,000 years ago. The sacred books of India indicate an indefinitely higher condition of life and morals than exist in that country to-day.

Alfred Russell Wallace, on the eve of his ninetieth birthday, as reported, says, "Man has shown no improvement either intellectually or in morals from the days of the earliest Egyptians and Syrians 7,000 years ago to the keel laying of the latest dreadnaught." He then goes on to say, "There has been, of course, a great accumulation of human knowledge, but for all that we

are no cleverer than the ancients. The average of mankind will remain the same until natural selection steps in to raise it." He undoubtedly states a fact until he gets to the remedy. Natural selection has had a chance to operate, has been operating through all those 7,000 years and still we have not only the average man, but we still have men living in the stone age, we have cave dwellers and more than that we have races that have not yet reached the condition of using stone implements or living in caves. The Cooboos or Kubus of southern Sumatra still live like pigs, picking up nuts, berries, edible roots and so on, with no habitations and the only difference they know between a living and a dead person is that the dead do not breathe. They leave their dead, unburied, where they fall.

The world is strewn with the ruins of extinct civilizations where now the rudest barbarism prevails.

What is the cause of this decay? The apostle Paul cannot be far from the truth, "For the invisible things of him from the creation of the world are clearly seen, being understood by the things that are made, even his eternal power and Godhead so that they are without excuse: Because that, when they knew God they glorified him not as God, neither were thankful; but became vain in their imaginations, and their foolish heart was darkened. Professing themselves to be wise they became fools, and so on. There is rich food for thought in that first chapter of his letter to the Romans. Divine revelation foretold the doom of many cities and nations and history has verified those predictions. These may illustrate the case of those civilizations that have not been mentioned in holy writ. In the unrenewed man there is no inherent, uplifting force. But to those who have been

'born of the Spirit,' to those who, by accepting Christ and believing on Him, have been 'born again' there is imparted an uplifting force and as the individual rises, civilizations rise.



## CHAPTER V

### *The Fall of Man*

**I**F one had been stationed on some nearby star, had seen the flash of newly-created nebula and then had watched it as it formed its rolling spheres circling around and completing the solar system, the evidence as to its creation and formation could hardly have been clearer than it now is. Further, if one had heard with his physical ears an audible fiat, "Let the earth bring forth grass," and so on, the evidence could hardly have been more conclusive as to the origin of life upon the planet than it is now. And if the whole process had been concentrated into seven of our earth days, the facts could hardly have been more vivid and *real* than they are at present. Facts do not change their nature by reason of age. No human eye saw or ear heard, but He who "spake and it was done," who "commanded and it stood fast," kindly revealed the facts to one who wrote them down for our instruction.

This chapter is the basis of the Bible. Although composed of many books written in different periods, it bears the marks of unity and of ultimate authorship. The first of Genesis alone could mark it as unique. It is not merely one of many sacred books. It stands alone. There may be many books of human origin that contain much truth, but there are none that bear the stamp and seal of Divine authorship that mark the Bible. It stands among books like the pyramid of Cheops among the others. Others may resemble it in form, some perhaps approach it in size, but there is an immeasurable distance

between them as to the teaching. The Bible is like the miracles of Moses and Aaron in the presence of Pharoah as compared with those wrought by the sorcerers.

Again, if one had seen and heard as stated above, and had known that all was done in the interests of created beings, nothing that could have secured the interests of those creatures in after years could have seemed incredible or to challenge a reasonable belief. Nothing could be more reasonable than faith in the narrative that follows that wonderful declaration of facts in Genesis I. There is no miracle conceivable that could match in the physical world the great miracle of creation. In fact the very existence of the universe is evidence, to a thoughtful mind, of a stupendous miracle, and one that makes all other miracles recorded in the Bible seem probable. To one who is cognizant of the constitution of matter and who admits that "in the beginning God" existed, creation itself and all its sequences as narrated in the revealed word are credible, natural. The great World Soul of Sir Oliver Lodge, the Supreme Intelligence of Wallace, the ultimate Force, the persistence of which (though not perhaps perceived as a Person) was the basis of Spencer's philosophy and of Farrady's physics, was known to Newton as God, to Moses as Elohim. The same Person revealed Himself to His chosen people in many ways and with names that adapt Him to every need of the race, until in the fullness of time He became Jesus, God incarnate, sacrificing Himself for the sins of the world. This last is really the greatest miracle of all, the one most vitally connected with man's welfare and yet one most stubbornly denied even by some who admit the miracle of creation. But this will be dwelt upon later.

But here we must strenuously contend that a book which opens with a revelation of such astounding, intellect-transcending truths as those in Genesis I, is reasonably entitled to more than ordinary consideration. None of its statements are to be flippantly thrown aside. Any rational religion involves the idea of a wisdom higher than man's, and man's highest wisdom is a confession of ignorance and dependence upon that which is higher.

When asked, in effect, whether we are to believe the Bible because of its contents, or believe the contents because they are in the Bible, the late Dr. Harper of Chicago University wisely replied "both." The idea implied is that there are so many things in the Bible that are known to be true that they establish the veracity of the book as a whole and we must believe other things in the book which we should be under no obligation to believe but for the established veracity of the book. This principle is involved in our every day affairs. The books of the merchant would be worthless if this principle were not allowed as valid in the courts. The merchant can prove his books by proving that some of the entries are correct. Other entries have to be admitted to be true because they are in the books. This principle, of course, is not infallible with reference to the merchant's books for he may be dishonest and make false entries. In other books there may be much truth and yet, owing to ignorance, there may be much that is untrue. But in the Bible there is no motive for dishonesty, and a writer who knew the wonderful facts recorded in Genesis I, would not belikely in ignorance to write untruths. Again, some may insist that Genesis I is allegory. No, it is no more allegory than Euclid's geometry. It is not probable that the following chapters are. It is true that the same man

may write the most profound mathematical works and "Alice in Wonderland." A man has done it. But he did not write a chapter of abstract mathematical truth and then a chapter of "Alice in Wonderland," bind them together and pass them off as one piece.

These thoughts apply here to the story of the fall of man. Simian anthropology teaches that man was created in the image of an ape and has been stumbling upward. Genesis teaches that he was created in the image of God and stumbled downwards. The first chapter of Genesis is correct. It is probable that the third chapter is. Accepting the fact that the universe is, that the narrative in Genesis I is true, there is no inherent improbability in the story of the fall. It is customary to smile at the snake story. But the smile may arise from self-complacent ignorance. At least it is not wise to treat as frivolous a story recorded as a fact, that stands in such close proximity with the wonderful story that immediately precedes it.

It is to be noted first that there was not the enmity nor fear existing between man and the serpent that there now is. It is not probable that Eve would have been more frightened at the sight of a large serpent than we at the sight of a cat. Even now in some parts of the earth serpents are domesticated like cats and for the same purpose. Second, it is coming now to be an established fact that animals have a language or means of communication among themselves which may be understood by men. Note the fact that a learned professor has recently devoted himself to the study of the Simian language, and the report that a department has been established in one of our great universities for study along the same lines. It is not impossible that our first

parents understood animal language and conversed with some of them.

But leaving this as being little relevant and of slight consequence, it is not a matter of surprise that Eve acted so little astonished. Whether, in general, animals could talk or not, with very limited experience she might not have known but that all animals could talk. So to Eve it may not have seemed marvelous that a beast should talk, for if she had not talked with them she had never spoken to any one but Adam and was totally inexperienced. Then with reference to the serpent, it is no more marvelous that it should have been endued with the power of speech for the occasion than that in later years, Balaam's ass should have been so endued.

Really the whole question of probability or improbability goes farther back than this first visible outcropping of evil. Has sin entered the world? The question needs no answer. It is too apparent everywhere. Admitting then that sin is in the world, it requires no stretch of credulity to believe that it entered with the first man. But how? By yielding to some temptation. But why should temptation in any form be allowed to enter an earthly Eden? The answer is apparent. It was to make virtue, goodness, righteousness, moral character possible to man. It must be an axiom of ethics that without liberty to sin, there could be no possibility of virtue. Without temptation to unrighteousness there could be no righteousness. For some reason God designed that man should be a moral agent, not a mere machine. a moral agent with the possibility of forming moral character, of cultivating virtue, growing in Godlikeness. The idea that this could be possible without temptation violates the very basic principle of morals. There could



be *innocence* without temptation but no virtue and none of the rewards of virtue could have belonged to one whose innocence had never been tried so that will power had to be exerted toward the right. It is resisting temptation by the power of one's own will that constitutes virtue, and it is persistence in this that builds up virtuous moral character, Godlikeness.

Men have been unnecessarily puzzled over the question why evil was allowed to come into the world. The basis of what we call evil is in the benevolence of God. This benevolence has shown itself in the construction of the universe so that it can be a school of ethics, a gymnasium for the practice of virtue, the development of moral character. This comes in two ways. First, the awful consequences of sin in the suffering it produces appeals to others, and the efforts to help and save have built up some of the most Godlike characters on earth. Farther than this, if there had been but one person in the world, he could have developed character *only* as, by the power of his own will, he had resisted the evil tendencies or inclinations that are within himself. While thus the basis of evil is potentially in the goodness of God, the actual, realized evil is the result of man's own choosing.

The stars move in their courses, yielding to the influences that control them, and make no devious ways. But there is no virtue in the outward correctness of their actions. God could have made men in the same way, but there would have been no more merit or virtue in them than in the stars. He did not choose to make them in that way. He did choose to make them and their environment so that infinite possibilities were within their reach. It follows then that unless temptation had come into the world, the whole machinery of the universe would



have been worthless for the purpose of developing free agents into virtuous moral characters.

A celebrated evangelist was recently asked, "If God is all-powerful and all-good, why doesn't he kill the devil?" The answer could have been, because the purpose of God now is the same that it was at the outset—to give men a chance to build up moral character by resisting temptation. And there is no inherent improbability in the statements regarding a personal devil who in the guise of a serpent or in the person of the serpent presented the first temptation. The story would seem violently improbable were it not for the connection in which it occurs. But the universe exists, and we have the record of its origin in a way that admits of no dispute that it came as a revelation from its Maker. The whole story is of miraculous events. It is itself a miracle in the sense in which the word is commonly used. The story of the fall is a part of that record. It is not to be tossed aside with a smile of self-complacent incredulity. It will not be so treated by those who are wise enough to feel their own ignorance and bow to the wisdom of the Highest. He has evidently revealed the truth to us in the records He has inspired. The fact of the fall is one of the bottom facts in human history, appallingly apparent everywhere.

But the question arises, was the temptation presented by a person, or by an innate propensity to evil? It is wiser to answer from the records than from any preconceived ideas of how it ought to be answered. There is evidence that the tempter was a person in the sense in which the term *persona* is applied to other spiritual beings. The idea does not necessarily involve that of locality or form, or space. God is a person and yet not

subject to these material limitations. In the records there is the same evidence of the personality of Satan that there is of the personality of God. If there is any difference it is in degree and not in kind. Man has fallen and that fall necessitates Redemption.

## CHAPTER VI

### *The Story of Redemption*

**T**HIS story begins in Genesis and is continued through all the book that is founded upon Genesis I. The promise was made in Eden that the seed of the woman should bruise the serpent's head. From there it runs through nearly or quite every book of the Bible until it reaches its climax in the resurrection of Christ. Redemption itself including the atonement has its necessary origin in two facts, *Justice* and *Sin*. In the very nature of things Divine justice requires that sin should be punished. As in the material universe, from a given force what is lost as force must be made up in heat, light, electricity or some other of the correlated forces of nature, so in the moral universe, what is lost from righteousness must be made up in suffering. Sin must suffer its penalty. And this is true whether as an attribute justice inheres in the nature of God to be administered independently of governmental relations, or whether it exists merely as a governmental necessity. And whether the "nature of things" existed first and God adapted Himself to it, or whether He existed first and adapted "the nature of things" to Himself, is not essential in this discussion.

Further, whether anything exists apart from the existence of God, or whether all things are but a manifestation of God, it is not necessary to consider, for no such considerations affect the *fact* that justice exists and justice demands that crime against our fellow men be punished, even if from no other reason than as a restraint of crime. Justice requires that sin should meet its

penalty even if for no other reason than to restrain men from sin. But judging from the analogies of nature, the correlation of forces, to say nothing of theological arguments, the Calvinistic idea that justice is an attribute inherent in God and the nature of things is most nearly correct. This requires that sin should be punished, that crime should meet its penalty independently of governmental relations. Justice may have a deeper origin and reach higher than governmental necessity. This necessity may be a sufficient warrant for justice in the punishment of crime in human society, but in the punishment of sin against God, punishment future and invisible to mortals, the sufficiency of this governmental necessity is not so apparent. However, it becomes more apparent as we remember that there are other intelligences than human beings who are affected by it.

But independent of these and all other considerations, justice demands the punishment of crime and sin. Consider this necessity first in human affairs, as there it is most apparent. What would be the condition of human society if all laws were done away with, or all penalties abrogated? Any such thing as order, peace or safety would be impossible. Through the laxness in the dispensation of justice, we have already approached a social condition that is well nigh intolerable. Contemporaneous with and following the teaching of loose theological ideas concerning Divine justice and loose administration of judicial justice, we are in the condition described by Hosea, (4:2) "By swearing and lying and killing and stealing and committing adultery, they break out and blood toucheth blood." This is the natural and necessary result of following the legal maxim, "It is better that ten guilty men escape than

that one innocent man be punished." The maxim is false. The fact is coming to exist, that ten innocent persons do suffer for every guilty person who escapes due punishment.

It was to secure the greatest good of the greatest number that God himself gave laws for the regulation of society. The gist of those laws, the ten commandments, was but the expression in words of eternal principles that inhere in the very nature of things. This is a fact, though it can be only stated here. The violation of those principles involves evil consequences as a matter of necessity. But in addition to those natural evil consequences of inherent principles, there are *statutory penalties* decreed. By statutory enactment or by concrete example, that penalty in every instance was death, even to extreme cases of the mildest of the commandments. This again must pass with the mere statement except with a few examples. "Thou shalt not kill," the statutory penalty was death; "steal," "He that stealeth a man . . . shall be put to death"; "covet," Achan *coveted* the gold and garment and suffered the penalty; "false witness," the law prescribed that it should be done to him as he thought to do to the one against whom he bore false witness. If by false witness he was compassing the death of another, he was himself to suffer the extreme penalty; "adultery," the statutory penalty was death for both parties. So of every one of the ten commandments, death was the penalty for the worst forms of violation and there were other penalties for the milder forms of their violation.

It is to be noted too that the penalty is not mere chastisement designed to reform the criminal. It is not reformatory punishment, but a *satisfaction of justice*

whether that justice be independent of or dependent upon governmental necessity. But for offences smaller than capital crimes the punishment is reformatory in so far as it strikes at the propensity that produces the crime. Avarice produces theft, the penalty strikes at the propensity that produces it, restoration many times over. Where this can not be, the penalty resembles the offence as a reminder of it, eye for an eye, tooth for tooth, burning for burning. These were the *statutory penalties* and not mere natural consequences.

It is worthy of note further, that the infliction of these penalties was intrusted to those who would be most likely to carry them out, the nearest of kin, those whose defensive passions would assist in meting out justice by assisting to overcome pity. "Thine eye shall not pity, nor thy hand spare." The good of society, the existence of society in conditions in which existence was tolerable demanded that justice should be meted out. It is noticeable too that every one was forbidden to attempt the perversion of justice. "Thou shalt not . . . countenance the poor man in his cause" (Ex. 23:2,3), or the man who has a poor cause. No official or professional was allowed to espouse a poor cause, or from professional pride, ambition, or money to clear the guilty. A woe is pronounced upon those who "justify the wicked for reward" (Is. 5:23). But on account of the prevalence of that practice and other evils, "Therefore is the anger of the Lord kindled against his people, and he hath stretched forth his hand against them and smitten them." (Is. 5:25). Scripturally there is a kind of false witness against society in clearing criminals that requires the same penalties to be inflicted upon the one who thus cheats the law as ought to have been inflicted upon the



culprit himself. If any person cheats justice by clearing the guilty, the same justice should be meted out to him, and professionalism does not count with God. "The Lord, the Lord God, merciful and gracious, long-suffering and abundant in goodness and truth, \* \* \* \* and that will by no means clear the guilty." (Ex. 34:6,7). His moral excellencies manifested toward his people will not permit him to clear the guilty.

This principle is written in nature. There is a moral conservation of the forces of justice and righteousness that what is lacking in one must be made up in the other, and professionalism does not count in this matter. If any man cheats justice the same justice should be meted out to him. The welfare of society, the nature of God and "the nature of things" require that justice should be administered even if it has to be done in spite of the modern machinery for defeating it. Modern courts are not God's vicegerents to the extent that he has appointed them and is always satisfied with their decisions. Not that they are consciously corrupt. It is probable that they never were more upright. But the safeguards designed to protect the innocent are woefully perverted to clear the guilty. *Whatever its origin, whatever its nature, whatever the necessity for its existence, there is such a thing as justice, and the welfare of humanity requires that it be administered and that crimes against humanity be punished.*

So much for human law and the necessity for justice in human affairs. Has it a broader field of activity? Does it exist only in the relations of man with man, or does it extend beyond these relations and into the sphere of the Divine government? Evidently it has this broader field, and enters into the sphere of the Divine

government. This is necessarily the case, if God is a *person* who has rights of his own, and can *think* and feel and will. The first table of the decalogue has primarily to do with sins against God. Crimes against men are sins against God, but farther than this is the fact that there are sins directly against God. Idolatry, not only in the outward act, but in the inner thought is sin. Blasphemy, the lightly taking of God's name upon our lips, is sin, any form of disobedience is sin, even where our fellow-men are not injured. It is noticeable that there are *statutory penalties* attached to these sins as well as evil consequences resulting from them. In the long run, these evil consequences may be terrible, but they do not sufficiently express the divine attitude towards sin. The divine attitude is expressed by the statutory penalties attached to violations of the commandments. Death was the penalty of idolatry, of enticement to idolatry, of blasphemy and of some other sins against God. In general "the soul that sinneth, it shall die." Death (sentence) passed upon all men "for all had sinned." *Whatever its nature, whatever its origin, whatever the necessity for its existence, there is such a thing as justice, and the well being of all sentient beings demands that it be administered and that sins against God should be punished.*

How then can any one escape? The problem was too deep for human wisdom. The wisest statesmen of old could not see how it was possible to forgive sin without causing the law itself to come into contempt and be disregarded accordingly. But God solved the problem that was too deep for men, and made provision for all future emergencies. That provision is the planting in men of the instinctive idea of the *efficacy of substitution*. When men make a machine some of whose parts are likely to

get out of order, they make it with reference to the possibility of renovating those parts. They thus make provision for future contingencies. When God made man, he made the same provision and that provision was made by planting in him the sentiment or *instinctive knowledge* that vicarious substitution was effectual and this makes vicarious sacrifice sufficient. The first men born into the world betray the presence of the instinctive, God-implanted sentiment, for, conscious of sin, they offered sacrifices, and Cain's offering was rejected, although it was a sacrifice of possessions, while Abel's was accepted because in addition to this, there was involved vicarious suffering, a type of the Lamb that in the future was to suffer for the sins of the world.

Men of all nations have shown the presence of the same sentiment, for all nations, generally speaking, have felt the necessity for expiatory sacrifices. All nations have offered them.

When God made man he made his spiritual nature with reference to the possibility of saving him should he need salvation, as his Maker certainly knew that he would. That possibility is in the instinct implanted in all human, and, we may reason, in all sentient beings, of the efficacy of vicarious sacrifice. This is the adjustment, so to speak, of man's spiritual nature to the possibility of salvation without himself paying the penalty of sin. All the human race, angels and demons, are so constituted as to recognize the efficiency of a voluntary substitution in suffering penalty. If one transgresses the law, another may by his own voluntary suffering satisfy justice so that the transgressor may escape the penalty. Incidents reported from Central Africa show the existence of an instinctive sense not only that demerit, sin, must be

punished, but that another and innocent party may voluntarily bear the penalty, and let the transgressor go free. If a current story be true, our own government has accepted a voluntary substitute in the place of the guilty party. In one of the Southwestern Territories an Indian murdered a white man. As usual, the government held the tribe responsible, and gave them a limited time in which to surrender the guilty party, or have war declared against them, and troops were sent to the place to carry out the order. Every effort was put forth to find the guilty party, but without success. Finally on the evening of the last day an Indian offered himself to the assembled chiefs as a substitute. "Take me," he says, "shoot me, and turn my body over to the white." It was done, and what could the whites do but accept it in the place of the guilty one?

Such voluntary offering of one's self as that of Publius Decius, or that of the Athenian king, Menaecius of Thebes, or of the daughter of Orion, prove the existence of this instinct in the people of those nations, which enabled them to see that God could be just and yet the justifier of all those who accept of their own vicarious substitute. The spiritual constitution of the race was adapted from the beginning to this plan of salvation.

That it is in accordance with God's purposes need not be argued with any one who believes that God was the author of the Mosaic law. Sacrifices, countless in number, of innocent animals were commanded to be offered as types of the one great sacrifice of Calvary. Atonement in the orthodox sense is in harmony with all God's teachings, verbal and by symbol.

The efficacy of vicarious substitution is written in the constitution of nature. It is supplied in the kingdom

of grace by the vicarious atonement made by God himself in the person of Jesus the Christ. But note, the substitution must be, as it was, vicarious and willing on the part of the substitute. The Christ was not unjustly compelled to take the sinner's place. Upon his Father's wish he voluntarily offered himself saying, "Lo I come to do thy will, O God." While it might have been unjust for God to have compelled his son or any other innocent party to suffer vicariously, it was not unjust for him to accept a substitute freely offered and Jesus says, "I lay down my life for the sheep."

But how could this sacrifice avail for those who died before it was offered? The written promise of the government to pay is as good as the gold, and the promise of God to redeem mankind was just as good before it was redeemed as after. In the counsels of God, and the knowledge of all sentient beings who were immediately affected, was "the Lamb slain from the foundation of the world." Even Abel, upon appearing at the gates of paradise, could have been admitted upon promise of the Son of God to pay the penalty of his sins four thousand years hence on Calvary. In the correlation of spiritual forces, what was lost by the fall is made up in redemption.

These things are stated as facts and as such they are corroborated by certain passages of scripture, while the probability that they are such lends additional probability to the scripture statements themselves. As facts, they interpret a symbolism of the old dispensation, while that symbolism verifies the statements as facts. They mutually sustain, explain and verify each other. The whole Jewish ritual based upon sacrifices was typical of the atonement of Christ. The first sacrifices offered



in the world were accepted or rejected according as they did or did not typify the atonement. All the God-appointed Jewish ritual was dead, unmeaning heathenism, unless its rites were types and symbols of something in the future. But they were not dead; they were not unmeaning heathenism, but God-appointed object lessons regarding "the Lamb of God that taketh away the sins of the world." As stated, Abel's sacrifice was accepted because of its symbolism and from his day to the time when the great Antitype was slain on Calvary, every sacrifice was accepted only as it pointed to the Lamb of Calvary.

As just stated, all these circumstances, types, symbols, ritual tend to corroborate, interpret, verify certain statements in the scriptures. There are literally hundreds of these that have their plainest, easiest, most harmonious signification in view of the fact that Christ really took the sinner's place, really suffered the penalty of broken law, "the just for the unjust," that God might be just and justify those who would accept that sacrifice. This is the crux of the whole question as to the true nature of the atonement.

Did Jesus die, not simply for us in the sense of dying for our welfare, but in our stead? Did he come to teach men duty, how to live by setting a good example, and then die as a martyr because he could not help himself? As for his example, the world had better examples in Enoch, Abraham, Moses and others of the old prophets and patriarchs than they had ever lived up to. As for his teaching, he taught nothing but what was already written in the old scriptures, and as for his martyrdom, it is puerile to say that he died because he could not help himself. One who could raise the dead could have saved



himself from the power of human enemies. He could have stepped over the prostrate forms of those who came to arrest him in Gethsemane; he could have stayed away from Jerusalem altogether, for he knew what was coming, or he could have summoned "twelve legions of angels"<sup>1</sup> to his defense as he told Peter.

On the Mount of Transfiguration Moses and Elijah talked with him concerning "the decease that he should accomplish in Jerusalem."<sup>2</sup> Jesus himself says, "Now is my soul troubled and what shall I say? Father save me from this hour but for this cause came I unto this hour."<sup>3</sup> Almost his first recorded words refer to the necessity for his death, "For as Moses lifted up the serpent in the wilderness, so *must* the son of man be lifted up."<sup>4</sup> A curse was pronounced upon all who violated God's law. "It is written, Cursed be he that confirmeth not all things which are written in this law to do them."<sup>5</sup> Man had broken every one of them, but Christ redeemed us from the "curse." "Christ hath redeemed us from the curse of the law, being made a curse for us: for it is written, Cursed is every one that hangeth on a tree." Gal. 3:10, 13.) He continually spoke of his death as the great object to be "accomplished."

Now was that voluntary death a substitution for the sinner's merited punishment? The question must be answered by the scriptures and by the logic of events,

---

<sup>1</sup> Mat. 26:53.

<sup>2</sup> Luke 9:31.

<sup>3</sup> John 12:27.

<sup>4</sup> John 3:14.

<sup>5</sup> Deut. 27:26.

the *facts* of history. In prophecy some of the classic passages are in Is. 53. "He was wounded for our transgressions, he was bruised for our iniquities; the chastisement of our peace was upon him, and with his stripes we are healed." "The Lord hath laid on him the iniquity of us all." "For the transgressions of my people was he stricken." "When thou shalt make his soul *an offering for sin*, he shall see his seed" and so on. "By his knowledge shall my righteous servant justify many; for *he shall bear their iniquities*." "He hath poured out his soul unto death: and he was numbered with the transgressors; and he *bare the sin of many*, and made intercession for the transgressors." These are a few passages from prophecy, all taken from a single chapter. But do they refer to Christ? Jesus thought they did, for he says to his disciples, "For I say unto you, that this that is written must yet be accomplished *in me*, 'And he was reckoned among the transgressors.' " (Luke 22:37.) The evangelist Mark thought they did, for speaking of his being crucified between two thieves, he says, "And the scripture was fulfilled which saith, 'And he was numbered with the transgressors.' "<sup>1</sup> Inferentially, also, they considered all the passages in the same chapter as applying to him as other inspired writers did. The Ethiopian eunuch was reading Is. 53 (see Acts 8:32 and on) when Philip interpreted the whole passage as being fulfilled in Christ. The epistles are full of indirect references to the same passages as referring to Christ, as (Heb. 9:28), "So Christ was once offered to bear the sins of many." I Peter 2:24, "Who his own self bare our sins in his own body on the tree." Christ himself says, "The son of

---

<sup>1</sup> Mark 15:28.

man came not to be ministered unto, but to minister and to give his life a ransom for many." (Matt. 20:28). "This is my blood of the new testament which is shed for many for the remission of sins." (Matt. 26:28). "As Moses lifted up the serpent in the wilderness, so must the son of man be lifted up" and so on. Paul exhorts the elders of the church of Ephesus, "Feed the church of God which he hath purchased with his own blood."<sup>1</sup> Again he speaks of "being justified freely by his grace, through the redemption that is in Christ Jesus."<sup>2</sup> When we were yet without strength in due time Christ died for the ungodly."<sup>3</sup> "God commendeth his love toward us, in that while we were yet sinners Christ died for us."<sup>4</sup> "We also joy in God through our Lord Jesus Christ by whom we have received the atonement." "Christ our passover is sacrificed for us." "Christ died for our sins according to the scriptures." "Ye who sometime were far off are made nigh by the blood of Christ." "Christ hath loved us and hath given himself for us an offering and a sacrifice to God." "By his own blood he entered in once into the holyplace having obtained eternal redemption for us." "Without the shedding of blood is no remission." "But now once in the end of the world hath he appeared to put away sin by the sacrifice of himself." "Christ was once offered to bear the sins of many." "We are sanctified through the offering of the body of Jesus Christ once for all." "Ye know that ye were not redeemed with corruptible things as

---

<sup>1</sup> Acts 20:28.

<sup>2</sup> Rom. 3:24.

<sup>3</sup> Rom. 5:6.

<sup>4</sup> Rom. 5:8.

silver and gold. . . . but with the precious blood of Christ as of a lamb without blemish and without spot." "Christ also hath once suffered for sins, the just for the unjust that he might bring us to God, being put to death in the flesh but quickened in the spirit." "If we walk in the light, as he is in the light . . . the blood of Jesus Christ his son cleanseth us from all sin." In every way, by all forms of expression by which it is possible for words to convey ideas, the idea of Christ as a substitute for sinners is taught in the scriptures.

This teaching is not confined to the meaning of any Greek preposition as "*pro*" and "*huper*" though it is distinctly taught by them. Some people urge that those prepositions have a broader meaning than "in our room" or "in our stead," while admitting that if "*anti*" were used there would be no possibility of denying that the idea of substitution was conveyed. But the prepositions "*pro*" and "*huper*" often do mean "instead of" while both Christ and Paul use that preposition "*anti*" (in composition) as Paul, (I Tim. 2:6) speaking of Christ, "Who gave himself a ransom for all." (*anti lutron*). Christ gave himself a ransom *instead* of the sinner. Christ uses the same preposition in the same way, "Even as the son of man came not to be ministered unto but to minister and to give his life a ransom for many." (Mat. 20:28.) (*lutron anti pollon*). Christ declares unequivocally that he came on purpose to give his life a ransom *instead* of many.

A final consideration in this connection is the statement of Paul, in arguing for the resurrection. He says, (I Cor. 15:17,18.) "If Christ be not raised your faith is vain, *ye are yet in your sins*. Then they also which are fallen asleep in Christ are perished." But why would they have been yet in their sins? There is no rational

answer except that unless Christ had accomplished his work *no sins* could be forgiven. The apostle does not argue that they were lacking on *their* part. He does not deny that they had accepted Christ, and had fully and heartily repented of their sins. He bases his declaration entirely upon the fact, apparently, that unless Christ's work were fully accomplished *no sins could be forgiven*, the living were in their sins in spite of repentance and their acceptance of Christ, the dead were *lost* in spite of their, possibly, martyrdom. The Greek word translated "atonement, (*katallange*) is from "katalasso" "to exchange." The term means "substitution." The atonement of Christ is the substitution of his sufferings for the punishment of sinners. And yet in spite of the fact that the atonement is written in nature, on the soul of man, taught all through the Bible the most plainly of any Bible truth, in spite of the symbolism of the original Hebrew word and the meaning of the Greek original, there is no fact so persistently, so illogically, so inconsistently denied as the fact of the atonement in its proper meaning. The objections are illogical for they are answered by the logic of events; the *fact* is that Christ *did die*, that God gave him to die. Christ came into the world to die, and unless he accomplished something by his death, and an end to some degree commensurate with the sacrifice, his death would have been a mere empty show, a mere playing to the galleries, as futile as wicked.

It is sometimes said that this scriptural view of the atonement represents God as unmerciful. But so far as this view has any weight, it is an objection against the fact that Christ died at all. Whether merciful or unmerciful, Christ did die upon the cross. This is the admitted fact and it surely would have been no more un-

merciful for God to send him into the world to die for a great purpose than to die for nothing. The fact is, *Christ died*. God "gave his only begotten son," Christ gave himself. What for? He says, "*lutron anti pollon*." It is said that an atonement was not necessary. That is not for us to decide. If it had not been necessary to accomplish some object, Christ would have stayed in heaven. The *fact* however is He gave his life. What for? He says, "*lutron anti pollon*." The symbolism in the old dispensation all pointed to an atonement. The sacrifices and offerings from Abel to Calvary pointed to an atonement. Christ gave himself an offering and a sacrifice to God. He says, "This is my blood of the new testament which is shed for many for the remission of sins."\* God knew better than men about the necessity for an atonement. It is sometimes urged that an atonement in the scripture sense is unjust, incredible, and of a demoralizing tendency. But so far as these are objections, they are objections to the *fact* that Christ died. But *Christ did die*. What for? He says, "*lutron anti pollon*."

In general the answer to all objections is an appeal to facts. Is it urged that God is too good to allow the innocent to suffer for the guilty? The one fact most appallingly apparent everywhere and always is that the innocent do suffer for the guilty, much more than the guilty themselves, and often instead of the guilty. Is it urged in particular that God is too good to send His only begotten son into the world to die for men? But He did die. The argument for such goodness is an argument against the one great central fact of the universe. Ad-

---

\*Mat. 26:28.



mitting this, would it have been more cruel for God to have suffered Him to die to accomplish a great object than for a mere empty show? And unless He did accomplish something more than a show, the show itself, except as a monument of folly, was absolutely empty, meaningless.

This fact is well illustrated by the familiar incident of a boy in Holland. Passing along a dike he discovered a small break that he could stop with his hand. But soon it would be too big for him to control. Before he could get help or devise means by which to stop the flow of water, it might pass beyond control and immeasurable disaster befall his people. There was nothing to do but to stop it with his hand, and so he lay all the chilly night and was found nearly dead in the morning. The gratitude of his people knew no bounds, for by his night of agony, he had saved their houses, perhaps their lives. He showed his love for his people by suffering to save them. But suppose he had spent a terrible night upon the cold ground of an unbroken dike, and had been found by a passer-by in the morning.

“What are you doing there, chilled almost to death by exposure through the night?”

“I am making a display of love for the people.”

What would the answer be?

“Display, indeed! Get up, and go home.”

A Russian nobleman, traveling with his family and a faithful servant, was overtaken by wolves. Every power was exerted, every resource exhausted, to reach a place of safety. Finally there was but one thing to do. One of them must be a sacrifice to save the rest. The servant volunteered, telling his master that he had hitherto shown his love by the service of his life he would show it now by

sacrificing himself to save them. He leaped to the ground. In the place where he was torn to pieces as a vicarious sacrifice that nobleman erected a monument bearing the words, "Greater love hath no man than this, that a man lay down his life for his friends." He sacrificed himself for a purpose, and an object was secured. But suppose he had gone out into the woods where there was nothing at stake to find the wolves to devour him? The master would have told him, "You can show your love for me more effectually by living and serving me faithfully through the rest of your life." Now, what would have been the influence of Christ's death if no farther object were secured than a mere display? Just that of the boy freezing himself without an object, just that of the servant sacrificing himself when nothing was at stake—nothing. Christ's death exerts a moral influence because an object of infinite importance was secured. He redeemed humanity by the sacrifice of Himself. They must indeed have confidence in histrionic display who believe that an empty, purposeless death on Christ's part could exert a moral influence. But to those who believe that, "He bore our sins in His own body on the tree," there is a drawing influence of incalculable power. He has made the atonement, the true, the only atonement for sin and thus He is the "Lamb of God that taketh away the sins of the world." Here is the great fact of objective salvation. Here the mystery is explained, how God can be just and yet forgive sins. Christ has suffered in our stead, has borne the penalty for our sins, and this is the great foundation act upon which subjective salvation is established.

## CHAPTER VII

### *Subjective Salvation*

**B**UT this provision for setting aside the penalty of broken law in behalf of those who accept the substitute is only a part of redemption. The other part is expressed by the apostle. "He died for all that they which live should not henceforth live unto themselves but unto him which died for them and rose again." (II. Cor. 5:15.) Salvation is not simply a saving from a statutory penalty for sin. It is that and much more. It is a state of heart, a new life, imparted by God Himself to those who will come to Him. But how shall they come? They must be drawn to Him by the power of an infinite love manifested by an uplifted Christ bearing our sins in His own body on the tree. As iron filings in a heap of sand or sawdust respond to the drawing power of the magnet, so there are human natures among the masses of men which respond to the drawing power of this infinite love. As magnetism induces magnetism, so love begets love, and this is the new life; for God is love, and one born of God has God's nature. What love? The love that is responsive to and begotten by the love of God manifest in the flesh to make atonement for our sins.

Paul explains it. "For the love of Christ constraineth us because we thus judge, that if one died for all, then were all dead; and that He died for all that they which live should not henceforth live unto themselves, but unto Him which died for them and rose again."

After all, the great final purpose of Christ's death was

to provide this new motive—this impelling power in this new life—in mankind. “He died for all that they which live should not henceforth live unto themselves, but unto Him which died for them and rose again.”

Here is displayed the full power of the moral influence of Christ’s death. Here is shown in the fullness of its scope “the expulsive power of a new affection.” Those who have been born again, and thus have been made partakers of the divine nature, are no longer selfish, no longer live unto themselves, “but unto Him which died for them and rose again.” It is not strange that this side of redemption should fill the angle of vision of some minds, but it is strange that they have not seen that all the influence which would secure subjective salvation is based upon objective redemption. The “moral influence theory” of the atonement is correct so far as it goes, but is wrong in so far as it rejects objective redemption. The scripture view includes both the so called orthodox view and the “moral influence theory” and builds the latter upon the former. Each is incomplete without the other. Gratitude to God for what he has done for us should be an inspiration to higher, nobler living. Further than that, the suffering, the work of the Christ for man’s objective redemption is a revelation of the *nature* of God that could not have been made in any other way. God, in the person of man, going about doing good, bearing our sickness, healing our diseases, and yet “despised and rejected of men,” scoffed at, spit upon, buffeted, crucified and all for love of the race that murdered Him! What a revelation of the nature of God! There is in one of the great galleries of Europe, a picture of “Angels adoring the dead Christ.” It is said that the looks of admiration, love, astonishment, and worship

pictured in their faces are marvellous. Angels worship Him not for any personal benefit they have received, but because before them they have the proof of an excellence of nature, a nobility of character such as they had never dreamed of in all the ages they had known and loved Him as the only begotten Son of God. But this suffering for men was an exhibition of his true nature; it was the index of a character that marked him in heaven and on earth as "the chiefest among ten thousand" and "the one altogether lovely."

No sentient being, human or angelic, who can appreciate moral excellence, admire true heroism, or marvel at infinite self-sacrifice, can fail to be drawn to such a One. This is the supreme culmination of spiritual influence. But yet however great this drawing power may be, and however great the subject of it is, it is but the beginning of subjective redemption. It is but the *paidagogos* to lead us to Christ and he imparts to us of that divine life which Adam lost by his transgression. God said to Adam, "In the day that thou eatest thereof thou shalt surely die. (Gen. 2:17.) But the death referred to was not the separation of the spirit from the flesh. That did not take place until nearly a thousand years afterward. But it was the loss of the divine, the God-imaged life which in later years is termed eternal life. This differs from the natural life not simply in *duration* but in *quality*, in *kind*. It was the life that allied him to God and that was the image of God. Adam lost it by yielding to the solicitations of selfish gratification. When he yields to the solicitations of divine, unselfish love that life is restored to him by the act of God. "If any man be in Christ he is a new creature." (II. Cor. 5:17.) "In Christ Jesus neither circumcision availeth anything, nor

uncircumcision but a new creature," (Gal. 6:15.) the creation of a new life, the kind of life that Adam lost by transgression. "As many as received him to them gave he power to become the sons of God, even to them that believed on his name; which were born, not of blood, nor of the will of the flesh, nor of the will of man but of God." (John 1:12,13.)

This is subjective salvation, the change in the *man himself*, or rather the creation in him of a new kind of life, and this kind of life may be as different from the unrenewed man's immortal spirit as that spirit differs from common animal life. No being can beget a kind of life that itself does not possess. Vegetable life cannot beget animal life; common animal life cannot beget the immortal spiritual life of man. It is different in kind. The common immortal spirit life of man cannot beget the divine life, the God-imaged life that is termed eternal life. Adam lost that life himself, he could not beget it in his offspring. It must be created anew in those who would possess it. This process is that described by the Christ, "Ye must be born again." This is being "born of the spirit." It is only thus that any of Adam's race can become "the sons and daughters of the Lord Almighty." This view is logical, consistent, reasonable, scientific, as well as scriptural. All the scriptural declarations along this line are not only reasonable but seem to be but expressions in words of conditions that must inhere in the very "nature of things." This new birth is subjective salvation, the complement of objective redemption. It cannot be otherwise than that the Savior's "ye *must* be born again" is the expression of an absolute moral necessity, the *sine qua non* of true spiritual life.

Here it is pertinent to inquire what *must* be the con-



dition of those who by heredity have acquired only the Adam life, or who, having inherited the divine life from Christian parents, have lost it by their own voluntary transgression and refused to yield to the drawing of the uplifted Christ? How about those who can look upon the suffering, sin-bearing, grief-laden Savior in Gethsemane or on Calvary and still reject him? "O Jerusalem, Jerusalem, thou that killest the prophets and stonedst them which are sent unto thee, how often would I have gathered thy children together, even as a hen gathereth her chickens under her wings and ye would not. Behold your house is left unto you desolate." (Mat. 23:38.) No tongue nor pen can describe the desolations that swept Jerusalem—a warning to those who reject him now. "Ye will not come unto me that ye might have life" (John 5:40) is the saddest wail from the bleeding heart of Jesus. The wail implies that men cannot have the divine life without coming to him and that the many will not come. "He that despised Moses' law died without mercy under two or three witnesses: of how much sorer punishment, suppose ye, shall he be thought worthy, who hath trodden under foot the Son of God, and hath counted the blood of the covenant wherewith he was sanctified, an unholy thing, and hath done despite unto the spirit of grace?" (Heb. 10:28,29.) Can it be possible that such persons possess the new, the eternal life? Can it be that they are subjectively saved while spurning the objective salvation? These questions need no answer, for the answer is in the very nature of things. The gospel of Christ is the "power of God unto salvation to every one that believeth," but it cannot be otherwise than the source of the greater guilt, ill desert, condemnation in those who reject it.

This brings us to consider the function of belief, or the necessity for a creed. There is a great deal said about and against creeds. Undoubtedly much of this opposition to creeds has arisen from an undue magnifying of unessential particulars into barriers of separation between different bodies of Christians. But here arises the difficulty of deciding to the satisfaction of all parties what are the essential and what the unessential articles of faith. Articles that some would consider trivial by others are esteemed fundamental and, after all, it may be better to have some decided convictions even upon non-essentials than to be without them with reference to the essential doctrines. But are there any articles in the creeds that are essential for salvation? Are we saved by a creed? Rationally and scripturally, yes. A creed is exactly what we are saved by. "He that cometh to God must believe that he is" and so on. No one could come to God who did not believe that there was a God. Neither could one experience subjective salvation who did not believe in Christ. Creed is from *credo*, "I believe." Belief is but another name for faith. "Without faith it is impossible to please God." The eleventh chapter of Hebrews is but a record of the wonders wrought by faith. Jesus the Christ is none the less emphatic. Every hope of benefit from Him is conditioned upon belief, every promise of salvation is limited to those who believe. "The Son of Man must be lifted up that whosoever *believeth* on him should not perish."<sup>1</sup> "He that *believeth not* is condemned already because he hath not *believed* in the name of the only begotten Son of God."<sup>2</sup> Condemna-

---

<sup>1</sup> John 3:14.

<sup>2</sup> John 3:18.

tion was upon all men and could be ascaped only by belief. "For God so loved the world . . . that whosoever *believeth* on him should not perish" and so on.<sup>1</sup> "As many as received him to them gave he power to become the sons of God, even to them that *believe* on his name."<sup>2</sup> And this declaration is supplemented by another, "He that believeth on the Son hath everlasting life: and he that believeth not the Son shall not see life; but the wrath of God abideth upon him."<sup>3</sup>

These are very explicit declarations made by those who ought to know. Further, they are not the mere *ipse dixit* of authority that could be made different by power. They are not dependent upon the volitions or actions even of the Infinite, for they are conditioned upon the limitations of the Infinite. If the preceding reasoning has been correct, the above declarations are but the expression in words of principles that inhere in the very nature of things immutable and eternal. And how many times the same truths are expressed, varied in every conceivable form of expression so that there can be no possibility of missing the truth and that "the wayfaring men though fools need not err" as to the way of salvation. The gospel of Christ is the power of God unto salvation to those that *believe*. What was the answer of Paul and Silas to the jailer at Philippi? "*Believe* in the Lord Jesus Christ and thou shalt be saved."<sup>4</sup>

But the further citation of passages emphasizing this truth would be tedious. The dark ages were but the

<sup>1</sup> John 3:16.

<sup>2</sup> John 1:12.

<sup>3</sup> John 3:36.

<sup>4</sup> Acts, 16:31.

shadow cast in the eclipse of the truth, *salvation is by faith alone*. A darker night will settle upon the earth if for any reason that truth should be again eclipsed. But how about works? Christ says, "This is the work of God that ye *believe* on him whom he hath sent,"<sup>1</sup> and he said it in answer to the question, "What shall we do that we may work the works of God?" The work of believing is the one supreme work that is essential to salvation and all other works must be the outcome—the result of a saving faith. The necessary works that James speaks of must be the fruits of the faith that Christ declares essential and that Paul emphasizes. It would seem then that there are some things to be believed and, formulated, they would constitute a creed. Furthermore, we are not at liberty to elect what we shall believe concerning him, and to reject anything that may not tally with our opinions. Jesus says to the Pharisees, "I go my way, and ye shall seek me, and shall die in your sins: whither I go, ye cannot come." He says also, "Ye are from beneath, I am from above: ye are of this world; I am not of this world; I said therefore unto you that ye shall die in your sins: for if ye believe not that I am he, ye shall die in your sins."<sup>2</sup> Jesus evidently thought that a person must believe something definite, positive about himself. What? That he was the Messiah, so long expected, so definitely described in prophecy, and all that Messiahship implied. He declares very explicitly that unless they believed that He was the Christ, with at least an origin different from their own, "ye are from beneath I am from above, ye are of this world, I am not

---

<sup>1</sup> John, 6:29.

<sup>2</sup> John 8:23, 24.

of this world." If you do not believe this he says, "Ye shall die in your sins; whither I go ye cannot come."

According to Christ's view, belief in His divinity was essential to salvation. It may be now. At least, it is *safer* to believe than to disbelieve. Christ's view is that the evidences of his origin, his nature and his work are so convincing that unbelief is the evidence of a moral culpability that would unfit them for his own companionship and that of his companions. They must, then, necessarily, like Judas, go to their own place. This in addition to *paying the statutory penalty for the sin of unbelief*. Christ says that the Holy Spirit should convince "of sin because they believe not on me."<sup>1</sup> Whatever men may or may not think, the sin of unbelief is the *sin*, the great sin, the mother of all sins, for all violations of the moral law, termed sins, are but the progeny of the old mother-sin of unbelief in and on the uplifted Christ. Scripture testimony is very full, explicit and strong as to the origin and results of the sin of unbelief, or lack of belief. "How can ye believe which receive honor one of another and seek not the honor that cometh from God only?"<sup>2</sup> There are some things certainly that men must believe concerning the Christ or they cannot inherit eternal life. "The fearful and *unbelieving* and the abominable, and murderers" and so on through that catalogue in Rev. 21:8 "shall have their part in the lake which burneth with fire and brimstone: which is the second death." We may not add to nor take from the words of the Christ in this regard.

One cannot enter the kingdom of heaven without a

<sup>1</sup> John 16:9.

<sup>2</sup> John 5:44.

*creed*, concerning the Christ, his origin, his nature, his office, his works and *work*. How many articles must the creed contain? Individual opinions differ, but it is certain that the Christ and the inspired writers would make it longer than many modern ministers would have it. The creed of the individual may be long or short according to the intelligence of the person himself. One may say, "I believe in the universe." That is very comprehensive. But as knowledge increases, this general statement may include a practically infinite number of particulars which when classified and arranged become the creed statements regarding the universe. One may say, "I believe in the Lord Jesus Christ." That too is comprehensive, and comprehends almost as much as the creed concerning the universe and like it can be resolved, with increasing knowledge, into, at least, a great many particulars which when classified and arranged become a creed statement concerning him. The works of nature are worthy of study, of classifying and arranging. The works and *words* of nature's Author are worthy of the same, and, the more we learn of them, the longer our creed becomes.

The objections to the creed statements already in existence may arise from any one or more of several causes. First, the creed statement may in reality fail to embody the scripture teaching upon that subject; second, the objector himself may fail to comprehend the depth of truth contained in the statements; third, an unwillingness on the part of the objector to accept for his theology the God of nature and the Bible. But *the God of nature and the Bible is the God with whom we have to do*, and we may as well keep Him in our theology as thrust Him out and in His place substitute one of our own cre-



ation. The God of nature is the God of the storm, the volcano, the earthquake, as well as of the gentle breeze, the warm sunshine and balmy air. Every exhibition of the destructive forces of nature is but a revelation of the nature of the God with whom we have to do. If one would escape the volcano, he must go beyond the reach of its destructive power. In general, men must conform to the laws of nature, for the laws of nature will not conform to the caprice of man nor stay their operation to accommodate men; and this without reference to the opinions of men. And the laws of nature, if not wholly projected into the realm of spirit, are counterparts of the laws that operate in the spirit realm. In neither can they be violated with impunity. When admonished to flee from the storm, the earthquake or volcano, men must find a refuge, or destruction overtakes them. The forces of Nature are the forces of God, but they do not suspend their operation if perchance a heedless human being gets in their way. The Bible represents the same God as ruling in the unseen universe, and when he says, "Flee from the wrath to come," they must and *may* find a refuge, for in His infinite mercy, He has provided one. That refuge must not be despised. "For our God is a consuming fire." Perhaps the most pernicious fallacy of modern theological thought is that, because God is a father, men may violate his laws with impunity, that because He is love, He never will punish sin. But it is because He is a father, because He is love, that He holds men amenable to the laws of His spiritual universe. The love of the unincarnate Father is infinite, for "God so loved the world that He gave His only begotten son that whosoever *believeth* on him should not perish but have everlasting life." Men are saved by a "*credo*." "*Believe* on the Lord Jesus Christ and thou shalt be saved."

## CHAPTER VIII

### *An Answer to Criticism—Isaiah*

**T**HUS far we have considered and quoted the scriptures of the old and new testaments as authoritative for instruction. We have assumed that a book of such unity and integrity as the Bible, founded as it is upon such intellect-transcending revelations as Genesis I, must naturally be received as authoritative in its own department. This would seem to be reasonable especially when its statements are so nearly allied to ethical axioms, or are the expressions in words of truths inherent in the very nature of things. Until within the last few years no apology would be needed for so considering and quoting them. But within the last thirty years or so, the trend of thought has been toward considering the Bible as simply a man-made book. Whatever may be the professions or honest convictions of the critics, this conclusion seems undeniable, and as a result we are having forced upon us a man-made Bible, an egocentric theology, a religion of evolution and salvation by culture.

This drift of thought is synchronous with and greatly promoted by a wrong use of modern critical methods. It is not that a method of investigation by internal evidence is wrong in itself, but its results may be entirely out of the way when those who apply such methods, "lean to their own understanding," too much, or ignore the fact that "Holy men of God spake as they were moved by the Holy Ghost," or professing to "take nothing for granted" they do take for granted the

soundness of their own premises and the infallibility of their own intellectual processes.

To illustrate some of these points, the opinion prevails that Moses wrote the book of Deuteronomy. But the last chapter records the fact and manner of his death, his age, the mourning of Israel, the appointment of Joshua and an encomium upon Moses. It would seem to be and is a legitimate inference that Moses did not write that chapter, but that it was written by some other person and at a later date, but it is not a legitimate inference that he could not have written any of the book or even the whole of it with the exception of the last chapter. It is very common for one to write his autobiography and after his death, for another to conclude the narrative by appending an account of the writer's death. In this case whether it is an autobiography or not must be determined by some other circumstances than that the last chapter contains an account of the writer's death, and so of Deuteronomy.

Again, a literary examination of the book of Job shows it to be a poem, and the identity of style points to a single author. There is nothing irreverent in the supposition that an author much more recent than that patriarch wrote it, but it is not necessary to conclude from this that it is a mere figment of the imagination. We believe in the existence of Julius Caesar as an historical personage although Shakespeare wrote his poem more than sixteen centuries after his time. Whether Job was an historical personage or not must be determined by some other circumstance than that *probably* the poem concerning him was written by another and a later hand. One of those circumstances is that Christ spoke of him as a veritable personage. Again, why do we believe that

Moses wrote at least a portion of the Pentateuch? Because it contains internal evidence of that fact in its express declarations. "And God said unto Moses, 'write this for a memorial' " and so on. (Ex. 17.14.) "And Moses wrote all the words of the Lord and rose up early in the morning" and so on. (Ex. 24:4.) "And the Lord said unto Moses, "Write thou these words" and so on. (Ex. 34.27.) "And Moses wrote their goings out according to their journeys by the commandment of the Lord." (Num. 33:2.) Here is direct internal evidence that Moses wrote some portions at least, and that he was inspired of God to do so.

Without entering upon a discussion of the merits or claims of the higher critics with regard to the composite authorship of the Pentateuch, the great historian, W. H. H. Leckey, gives us a hint that may well be pondered. "I may be pardoned," he says, "for expressing my belief that this kind of investigation is often pushed with exaggerated confidence. Plausible conjecture is too often taken for positive proof. Undue significance is attached to what may be mere casual coincidences and a minuteness of accuracy is professed in discriminating between the different elements in a narrative which cannot be attained by mere internal evidence. In all writings, especially in an age when criticism was unknown, there will be repetitions, contradictions, inconsistencies and diversities of style, which do not necessarily indicate different authorship or dates." Even Leckey then would be slow to accept the results of a very conservative criticism of the Pentateuch. Much less can we receive the extravagant conclusions of radicals.

For first, many of their assumptions are entirely without foundation, e. g., some assume that a prophet of the

Lord would never hesitate to do what God commanded, hence the story of Jonah is a myth. No man can know the future, hence any book like the prophecies of Daniel must have been written after the events had transpired. This is the argument of Porphyry against the book of Daniel fifteen centuries ago. It is assumed that all human progress has been steadily, uninterruptedly forward, without break or setback, and hence the descriptions of a higher civilization in Jewish history must refer to a late date. It is assumed that a prophet living and penning his prophecies through sixty years of time could never have swerved a particle from his original style of writing, hence the two Isaiahs. It used to be assumed that the art of writing was unknown in the time of Moses, and hence he could not have written the books commonly ascribed to him, and that so grand a character as his is described as being could not have lived in that age, and hence there was never such a man as Moses. It is assumed that in speaking through his prophets, God never uses the prophetic past tense, and hence when he says of Cyrus, "I have called thee by thy name, thou art mine," and so on, those words must have been spoken during the life of that prince and certainly were not written until afterward. The final great assumption is that there is nothing but the purely human element about the writings, nothing of a divine or superhuman nature in them. This last assumption vitiates absolutely every conclusion based upon it.

These examples serve to illustrate some of the assumptions upon which some of the critics base their conclusions.

To illustrate the fallibility of men in the application of these methods, take a single example as a type of many,



the book of Isaiah. The first concession usually made to the critics as being most reasonable is the double authorship of that book. As one writer says, "The different themes and literary styles, the frequent references to the Babylonians, not as distant allies, as in the days of Isaiah the son of Amoz, but as the hated oppressors of the Jews; the evidence that the prophet's readers are not exiles far from Judah; the many allusions to the conquests of Cyrus—all these leave little doubt that chapters forty to fifty-five were written in the latter part of the Babylonian or the first part of the Persian period." This view seems very credible and many perfectly sincere, earnest and candid Christian people may accept the premises and conclusions. But an equally candid examination of internal evidence would show that such conclusions are not warranted. With reference to theme and literary style take a passage from the book itself "The wilderness and the solitary place shall be glad for them; and the desert shall rejoice, and blossom as the rose. It shall blossom abundantly, and rejoice even with joy and singing: the glory of Lebanon shall be given unto it; the excellency of Carmel and Sharon, they shall see the glory of the Lord and the excellency of our God. . . . Then shall the lame man leap as an hart, and the tongue of the dumb shall sing: for in the wilderness shall waters break out and streams in the desert . . . And an highway shall be there, and a way and it shall be called, the way of holiness, the unclean shall not pass over it; but it shall be for those; the way-faring men though fools shall not err therein. No lion shall be there, nor any ravenous beast shall go up thereon, but the redeemed shall walk there; and the ransomed of the Lord shall return and come to Zion with songs and ever-



lasting joy upon their heads; they shall obtain joy and gladness, and sorrow and sighing shall flee away." *Therefore*, "Comfort ye, comfort ye my people saith your God. Speak ye comfortably to Jerusalem and cry unto her that her warfare is accomplished, that her iniquity is pardoned; for she hath received of the Lord's hand double for all her sins . . . . Every valley shall be exalted and every mountain and hill shall be made low; and the crooked shall be made straight and the rough places plain; and the glory of the Lord shall be revealed and all flesh shall see it together."

Now, in the above extract, where do the theme and style so radically change that the same man could not have written the whole of it? Or at what point is there such a change that it is *improbable* that the same man wrote the whole extract? Yet all that precedes the italicized "therefore" is from the 35th chapter and the balance is from the 40th chapter. Chapter 36, 37, 38 and 39 are historical, Isaiah's account of Hezekiah's reign, just as we should expect; for in II Chronicles 32:32, we read, "Now the rest of the acts of Hezekiah, and his goodness, behold, they are written in the vision of Isaiah the prophet, the son of Amoz, and in the book of the kings of Judah and Israel."

Turning back to "the book of the kings of Judah and Israel," we find (II Kings, chapters 18, 19 and 20) an account of Hezekiah, and turning forward to "the vision of Isaiah the prophet, the son of Amoz," we find in chapters 36, 37, 38 and 39, an account supplementing both the preceding accounts of Hezekiah's life. Isaiah was an historian as well as a prophet, and some of his historical writings are found before we come to the 35th chapter.

With reference to Babylon's being referred to "in the

days of Isaiah, the son of Amoz," as a friendly ally, read chapters thirteen and a part of fourteen where such a fearful doom is pronounced upon it. "The burden of Babylon which Isaiah the son of Amoz did see."

With reference to the assumption that the latter part of the book was written after the return from the captivity, see chapter 49:22 *et seq.* where the promise is that God will bring his people back from captivity. "Thus saith the Lord God, Behold I will lift up mine hand to the Gentiles, and set up my standard to the people: and they shall bring thy sons in their arms, and thy daughters shall be carried upon their shoulders . . . . Shall the prey be taken from the mighty, or the lawful captive delivered? But thus saith the Lord, Even the captives of the mighty shall be taken away, and the prey of the terrible shall be delivered: for I will contend with him that contendeth with thee, and I will save thy children."

This certainly looks as if God's people were still in captivity and that God *in the then future* was going to deliver them. Such instances might be multiplied but these will serve as examples. With reference to Cyrus, there has been such a thing as prophecy in the sense of foretelling future events as well as in the sense of teaching. That fact must be considered later, but here it is sufficient to say that there is little reason to doubt the generally received opinion that the prophet wrote in the prophetic past tense of future events. And that Isaiah is the author of these words is the more probable from the fact that he is the undisputed author of most wonderful predictions concerning Babylon, detailing the most minute circumstances concerning that city, those predictions in the first part of the book and those in the

last part fit each other as accurately as the two pieces of a paper that has been torn apart.

Besides this presumptive evidence, we have what, with most men, is conclusive evidence upon this point, that of the inspired writers of the New Testament. Isaiah is quoted twenty-one times in the New Testament with his name attached to the quotation, as Matt. 3:3, "This is he that was spoken of by the prophet Esaias" and so on. Christ makes one quotation and Matthew, Mark and Luke (both in his gospel and the Acts) quote from Isaiah and couple his name (in the Greek form) with the quotation. Also Paul in his epistles. There are twenty-one such quotations of which ten are from the first thirty-nine chapters and eleven from the last twenty-seven or from the assumed pseudo Isaiah. But of this it is said of course that writers simply reflect the popular opinion which the critics consider erroneous. But with reference to this, an incident is suggestive. Luke, at least does not cater to popular impressions when they are not correct, as in the same chapter in which he speaks of Isaiah, he corrects a popular misapprehension. In the beginning of his genealogy of Christ, he says (Luke 3:23), "Jesus himself began to be about thirty years of age being *as was supposed* the son of Joseph," implying that the supposition was not correct, but that God was his father. He here corrects one misapprehension. If the popular idea about Isaiah had been wrong, he probably would have corrected that also.

Again, the scriptures from the time of Isaiah to Christ were so scrupulously guarded that no one could have joined his own works to those of that prophet even if he had desired to sink his own personality after writing such a wonderful production as those last twenty-seven

chapters. These considerations, among others, make the probability practically infinite that "Isaiah the son of Amoz" was the author of the entire book that bears his name. If the contentions of the critics fail in this case, there is little reason for accepting their conclusions in other cases.

Accepting such conclusions has a tendency to impair our faith in the inspired writers of the New Testament.

## CHAPTER IX

### *Another Answer to Criticism—Daniel*

THE assumptions of some of the more radical critics that certain books must have been written after the events mentioned in them had transpired requires a few moments' attention. In our scriptures there are *prophecies* that do not partake of the nature of Sybilline oracles, prophets who were not Delphic priests nor any kin to them. As certainly as certain writings are in existence, so certainly must they have come into existence before some of the things written in them transpired. Some years ago the papers contained notices of a book written to prove that the entire Bible is a fiction proceeding from the brains of some monks in the middle ages. But if the Bible did not exist before, how does he account for the origin of monastic institutions? Few however even of the radical critics would go to that extreme. However, starting with the same premises and reasoning in the same way, their conclusions are not more reliable though less ridiculous. The fact is, as declared by Peter (II Peter 1:21), "Prophecy came not in old times by the will of man: but holy men of God spake as they were moved by the Holy Ghost." If there is anything in history, sacred or profane, that can be relied upon, the statement is true. If there is not, then certainly the critics themselves have no grounds for premise or conclusion. There are hundreds of prophecies that, evidently, were written from a few days, perhaps, to hundreds of years before the events transpired, and

that have been literally, accurately fulfilled. We take a single example to illustrate this, and we take it from Daniel the more readily because he is one whose name has been taken from the list of prophets by some of the critics. A young graduate from a certain theological seminary exclaimed, when reference was made to a prophecy of Daniel, "Why, Daniel was not a prophet." This statement indicates a modern drift of thought. But let us examine a passage from the book that bears his name (Daniel 9:25), "Know therefore and understand that from the going forth of the commandment to restore and to build Jerusalem unto the Messiah the Prince shall be seven weeks and three score and two weeks."

Here is a clean-cut, positive declaration as to an event to take place in the future. The time periods are definite. Each week (Shabua) refers to a period of seven years, and there is no "day for a year" theory involved in this consideration. When Daniel refers to a week of days, he so defines it, as in 10:2, "In those days, I Daniel was mourning three full weeks"—"weeks of days" (Shabua ganim). The same in the third verse.

It is again to be noted that the prediction is to the "Messiah." Jesus was not the Anointed One until his baptism. The preceding verse (24th) also says "to anoint the Most Holy." We are to look then for the end of the 69 weeks at the baptism rather than the birth of Jesus. From the going forth of the commandment and so on to the baptism of Jesus was to be  $7+62=69$  weeks  $\times 7=483$  years. Various starting points have been suggested with various unsatisfactory results, but there is one that answers every requirement and absolutely fits the conditions.

In Ezra 7:12-26 we have a decree that forms a very



striking landmark; that of Artaxerxes written in the old Aramaic language and designed to arrest at once the attention of the reader as being something of unusual consequence. It may be urged that it was not a "commandment to restore and to rebuild Jerusalem" but that is very plainly implied. The king himself calls it a "decree" (verse 13). He gives all the exiled Jews permission to return to Jerusalem and to carry practically unlimited treasures, "And all the silver and gold that thou canst find in all the province of Babylon with the free will offerings of the people" and so on. (Ezra 7:16.) See also verse 15. Further than this he says (verse 21), "I Artaxerxes the king do make a decree to all the treasurers which are beyond the river that whatsoever Ezra, the priest, the scribe of the law of the God of heaven, shall require of you it shall be done speedily."

For what purpose were these vast treasures to be used? One was as expressed, to buy sacrifices and offerings, but the real purpose is expressed in the eighteenth verse, "And whatsoever shall seem good unto thee and to thy brethren to do with the rest of the silver and of the gold that do after the will of your God." That contains the gist of the whole decree. The temple had been rebuilt. What should he and his brethren wish to do with such vast treasures if not to repair the city itself, as well as the temple? According to Dr. Prideaux this is exactly what Ezra did "with the rest of the money." The work also was done in the first 7 Shabua = 49 years mentioned in the prophecy of Daniel. But that Ezra considered that he had received a "commandment" similar to the one mentioned in Daniel 9 is apparent, for in his prayer, (Ezra 9:9) he speaks of the favor of the kings of Persia "to give us a wall in Judah and Jerusalem."

This decree was issued B. C. 457. Subtracting this from the 483 years of Daniel's prophecy, we find Daniel's 69 weeks projecting 26 years into A. D. But Christ was four years old at the beginning of A. D. and this added to 26 makes him exactly 30 years old at the expiration of Daniel's prophecy, taking the decree in Ezra 7 as the starting point. To sum up, Daniel says that from the going forth of a certain commandment to the Messiah should be 483 years. In Ezra 7 there is a remarkable landmark, calculated to arrest the attention of the most casual reader of the original,—a decree given by the king of Persia containing (verse 18) *carte blanche* permission for him to do whatever they chose with hundreds of thousands if not millions of dollars.

Taking that as a starting point it is exactly 483 years to the Messiah. After that the Messiah was to be "cut off but not for himself."

He was "cut off" three and one half years later or as stated in verse 27, "in the midst of the week," that is in the one remaining of the 70 mentioned in verse 24.

"He shall cause the sacrifice and the oblation to cease," having fulfilled all that which they typified.

It may be urged that the sacrifices and oblations did not cease, but were offered after that. It is true that the Jews who reject Christ continued to offer them, but they were not required and *the church* did not offer them.

The minor details of that prophecy all harmonize with the general result.

Of the panorama of future events spread out in vision before the prophet we have here nothing to do. We only insist upon the pivotal fact that hundreds of years before the events transpired he uttered a prediction that was

fulfilled to the letter, and in the very year predicted. It is enough here to show that Daniel was a prophet as Jesus the Christ called him, that he was one of those "holy men of God" who "spake as they were moved by the Holy Ghost."

It does not help matters any to ascribe a later date to the book of Daniel than the traditional one for it certainly was written before the destruction of Jerusalem or the death of Christ. If we concede this we may as well concede the traditional date. But with regard to the traditional date of the book a very significant incident is commonly overlooked. When Rawlinson in 1854 read the cuneiform inscription concerning Belshazzar, Daniel's correctness as a historian was established.

But that is only a part of the truth. Why was it that Herodotus on his visit to Babylon half a century after the traditional date of Daniel's book failed to find any mention of Belshazzar? It was probably because the account recently found buried in Ur of the Chaldees was buried there before his visit. His very ignorance of Belshazzar is evidence that the account had been written and lost before his visit.

But not insisting upon this point as essential, the book was written at least some centuries before the events prophesied came to pass. This is but one instance of hundreds. "Prophecy came not in old time by the will of man, but holy men of God spake as they were moved by the Holy Ghost."

Fulfilled prophecy is one of the "infallible proofs" of the divine nature and origin of the "scriptures of truth"—proofs that separate them by an infinite chasm from the sacred books of the ethnic religions.

## CHAPTER X

### *Dangers of Egocentric Theology*

**T**HE old testament as a whole is a solid structure built upon Genesis I, its declaration, "In the beginning God" and the facts affirmed in that first chapter. Its history is a record of God's dealings with his chosen people.

The new testament is a solid structure based upon the old and upon the further fact that "God was manifest in the flesh, justified in the spirit, seen of angels, preached unto the gentiles, believed on in the world, received up into glory." (I Tim. 3:16.) "God hath visited and redeemed his people." (Luke 1:68.) "The Word was with God and the word was God." (John 1:1.) "This is the true God and eternal life." (I John 5:20.) "The only wise God our Savior." (Jude 25.) "In him dwelleth all the fullness of the Godhead bodily." (Col. 2:9.) The new testament is a record of the salvation provided by the incarnate God. God himself provided salvation, "eternal redemption." He has not only provided salvation but in the new testament he has left, plainly written out, the directions as to obtaining that salvation. We have every reason to believe that those records are correct, and their teachings to be relied upon, and that they are to be our guide.

With those who reject the Bible in its entirety we have nothing here to do. But there are those inside of the nominally Christian churches, leaders in those churches, who profess themselves Christians and believers in God's word, who yet openly teach that there is something in each individual that is the final arbiter of ques-

tions of religious belief. This is an "inner light" or "Christian consciousness" which they consider to be paramount to the scriptures, and whose teachings are to be received without reference to, and in spite of, the teachings of the scriptures.

W. E. Channing has been styled "a prophet of the Christian consciousness regarding the future." His position was, "whatever doctrines seem to us to be clearly taught in the scriptures we receive without reserve or exception." But in recent years leaders in churches not Unitarian go indefinitely beyond that position and say in substance, "if you have [a supposed] consciousness of a truth, cling to it in spite of anything that the Bible may or may not say about it."

One writer whom we have in mind has a "Christian consciousness" that there is a probation after death, and that there will be enough of such probations in the future life to make it certain that everybody will be saved. Of Luther, Calvin, Augustine, Anselm, Edwards and others, he says, "This is their common colossal defect; that they make but incidental use of the consciousness of Christ, (that is the Christian consciousness) in their determination of theological opinion." But he excuses them in part, for exegesis was against it, the facts of life and the common notion that the redemption scheme was confined to this life were against such a belief. He goes on, "Texts might be quoted almost without number against a nobler theology [that is that there is probation after death] and with the assumption that the day of grace was confined to this world, and the awful facts of human history were simply incompatible with an optimistic creed," (of future probation).

The "optimistic creed" must be sustained at all

hazards, no matter what becomes of "texts almost without number."

But why does he think that all of these thinkers and teachers have made such a colossal mistake as to suppose that there was no probation after death or that salvation was not universal? He answers, "These thinkers who began with an open vision of the highest defer hardly at all to the *creative* Christian consciousness." Because they did not create their religious systems out of their own "consciousness" they were all at fault.

And yet that writer may be mistaken in supposing that those men did not defer to a Christian consciousness, for they may have had a consciousness of the truths revealed by the scriptures.

The writer above referred to has recorded several of the creatures of his so-called Christian consciousness that are not in accord with either the facts of nature or the truths of revelation. We note one or two more. One is the absolute universalism that his consciousness evolves or creates. He says, "The scheme that contemplates the salvation of only a part of the human race is the ultimate blasphemy of thought in which our western civilization has been in part living for fifteen hundred years." (Query, how long has our western civilization been in existence?)

With reference to those schemes of theology that contemplate that some will be lost he says, "Now in the case of those who believe that the Christian consciousness is the *creative* and regulative source of all theology, these partialistic schemes must be forever abandoned."

"Some will be first and some will be last, one will be elected to lead and another to follow; but all will be chosen for service, all for the beatific vision." He ad-



mits that many texts of scripture may be quoted against this view, but, he says, this fact "need trouble no one."

We may add one more idea from the same writer, that with reference to the nature of Christ and of men in general. He says, "According to habits of thought but recently broken up, God had but one son." But he affirms, "This opinion is no longer preachable or credible among thinking men."

Of course all of those passages of scripture that refer to Christ as the "only begotten son" must be swept away in the interest of his own particular belief. "All men are sons of God," and he uses the term "consubstantiated with God." He indeed admits that Paul, James, John and other scripture writers had this "consciousness" but the teachings of their "consciousness" must be corrected by his own "consciousness," or by that of any one else who might differ from them.

We have considered a few propositions from a single writer to illustrate a strong trend of thought at the present time. A leading Unitarian expressly declared that the Bible was an orthodox book, and one could get nothing but orthodoxy out of it if it were taken as it reads, but his idea was that all of its contents must be arraigned at the bar of that so-called consciousness, and must stand or fall by that as judge.

And such ideas are not confined to that denomination. It is the trend of thought, the drift of opinion of a large number of the leading teachers and preachers in the so-called orthodox churches. One of the secrets of its power is its covert flattery of men. It appeals to the complacency of men in their own wisdom and goodness. It virtually says to such, "You are learned, you are wise you are good, you need not bow to any outside authority

for instruction. You are yourself able to decide what is true and what is not. Stand by your beliefs.”

This position is greatly aided by the higher criticism by which almost any obnoxious teachings of the scriptures may be disregarded. Even where this is not wholly the case it occasions a general relaxation of the strong grip the Bible teachings formerly held upon the consciences of men.

But the bottom fact in the whole matter of this so-called consciousness is that it may not be consciousness at all but merely a belief so strong as not to be distinguishable from consciousness. And yet that belief may not be correct. One cannot have a consciousness that there is a planet as large as Jupiter revolving around the sun in an orbit between the orbits of Earth and Mars. It is not a fact. One cannot have a consciousness that the sun, moon and stars revolve around the earth as the center of the solar system. It is not a fact, though for ages men had a conviction so strong that it could not be separated from consciousness that it was the case.

The Moslem world holds its religious convictions with an absoluteness that cannot be distinguished from consciousness and yet those convictions may not be correct. Any number of instances might be given where beliefs have been held so strongly as not to be distinguished from consciousness and yet have been proven to be false.

The whole force of this teaching about a Christian consciousness is directed to the establishing of an egocentric theology. The individual himself is considered to be the only infallible element in his beliefs. It is not an infallible church, an infallible pope, nor an infallible Bible, but an infallible ego that is to be the final arbiter of truth in matters pertaining to religion. The infallible

ego is the center of belief, the *creator* of its own theological system. But there are as many objective facts in theology as in astronomy.

These facts cannot be removed by the wish of man nor by the opinions of men. It is dangerous to assume that they can be. They are false teachers who teach that they can be. They are unsafe leaders who lead men to think that each man is a law unto himself. But there is something outside of one's self that assumes to be a guide. It is a book that opens with a wonderful vision of how the worlds were formed. That narrative as the record of actual facts has been confirmed by all of the advances in astronomy for the last one hundred years, and the discoveries of the last few years have as nearly proven the account to be correct as any thing not the subject of mathematical demonstration can be proven. But a mathematical calculation of probabilities as to the truth of both would bring those probabilities so near infinity as to be undistinguishable, practically, from it. Together, they form a wonderful voucher for the book that is founded upon the first chapter of Genesis. The records of geology absolutely confirm the records in those chapters. The discoveries of archaeology, since that science was born, confirm the accuracy of the book in general.

In hundreds of instances some casual utterance is found to be the declaration of an eternal principle in nature that could hardly have been discovered by centuries of unaided human study. These are wonderful vouchers for the truthfulness of the book.

Further, besides the first chapter of Genesis, hundreds of prophecies, uttered from a few days to hundreds of years before their fulfillment confirm the divine origin of the book. It is a revelation of human nature and we can

hardly know ourselves without consulting its pages. These circumstances should prove the book. The merchant does not have to prove every individual item charged in his accounts. He may prove a reasonable number, and all items must be admitted unless there is plain proof to the contrary in each case. The contention here is that these circumstances connected with the Bible should prove the books so that a candid man may rely upon their teachings even though he may not be able to comprehend them. Any other course is like subjecting the magnetic needle to his own feelings. One may have a compass that in hundreds of instances has been correct. Its needle points to the magnetic pole. But if the owner were lost in a forest he might feel that the compass was not correct. Some disturbing influence must be at work, he might think. The needle says that one direction is north but he is conscious that another direction is north. But if he goes by that "consciousness" or acts in accordance with some "inner light," he may find to his sorrow that the compass was right and that he was wrong.

This illustrates our relations with the Bible. We may feel that in some instances it must be wrong. Still it is not safe to assume that it is. It should be taken as it reads, simply remembering, that, like other literature, it is adapted to the wants, the needs of men. It deals in poetry, parables, figures of speech and so on. But these are easily enough, as a general thing, distinguished by the candid mind. They but adapt it the more perfectly to free moral agents, throwing them back upon their own candor and sincerity, demanding a right attitude of will, requiring an earnest desire to find the truth that they may live by it. That is why the Author of the Bible has

allowed difficulties to appear. They are valuable for developing virtuous character in moral agents.

But the parables are readily seen to be parables, figures of speech are seen to be such, and their meaning is generally apparent; though sometimes that which seems to be an extravagant figure of speech may, after all, but express a truth too recondite for us to readily understand.

As an example take the Savior's words to those who have followed him "in the regeneration," "Every one that hath forsaken houses or brethren or sisters or father or mother or wife or children or lands for my name's sake shall receive an hundred fold and shall inherit everlasting life." (Mat. 19:29.) Consider first relationships. He elsewhere says, "Whosoever shall do the will of my father which is in heaven, the same is my brother and sister and mother." (Mat. 12:50.) In this regard he is speaking to those who have "followed him in the regeneration," who have been "born of the spirit." He is speaking to those, "as many as received him to them gave he power to become the sons of God, even to those that believe on his name; which were born not of blood nor of the will of the flesh nor of the will of man but of God." He says to his disciples, "All ye are brethren." They were, in the true sense of being the children of one father, God. It is no perversion, either, to call the elderly women, who have been born again, mothers in the church.

We magnify fleshly relationships; Christ magnifies spiritual relationships. With regard to possessions, the true Christian can possess "all things" even though he cannot and does not wish to exclude every one else from

their possession. This is "my country" though I cannot push every one else out of it.

Whether or not I have been happy in choosing an illustrative example, it is true that seeming figures of speech may correctly express truth too recondite for us to perceive, or which men would not readily accept if they did perceive them.

There is poetry, too, in the Bible that indicates that poetic license has been taken, but not to an extent to be misleading.

But there is enough plain, straightforward teaching that cannot honestly be evaded. When the book says that it shall not be well with the wicked it is not safe to assume that it will be well with the wicked. There is an amiable complacency abroad that fails to take into account the heinousness of sin against God. But God will judge men according to his own view of sin, and it may not be the amiable one that some men take. When the book says, "These shall go away into everlasting punishment," (Mat. 25:46.) it is not safe to assume that all shall go into life eternal. It may have been Jesus who spoke those fearful words, and they may be true. When the scriptures in numberless instances speak of the Devil as if he were a veritable personage, it is not safe to teach that there is no such being. It may be that there is, and that he has gained a great point in convincing religious teachers that there is not. When the King is represented as saying to some, "Depart from me ye cursed into everlasting fire prepared for the devil and his angels," (Mat. 25:41.) it is not safe to assume that those words were never spoken or if spoken, were not true. They may have been spoken, they may be true and have a fearful significance.



When Christ is represented as saying to certain religious teachers, "Ye are of your father the devil, and the lusts of your father ye will do," (John 8:44) it is not safe to teach that every man is a son of God and that all they need is to become conscious of the fact.

When a man ceases to be a child of the devil and really becomes a son of God he may become conscious of the fact, for, "He that believeth on the Son of God hath the witness in himself, (I John 5:10.) "For as many as are led by the Spirit of God they are the sons of God," (Rom. 8:14) and "The Spirit itself beareth witness with our spirits that we are the children of God." (Rom. 8:16.) But this witness is given only to those who believe on the Son and by believing on him have received the "power to become the sons of God." When one becomes a child of God he may become conscious of the fact and not before.

It is urged, however, that all such passages must be interpreted in the light of the parable of the prodigal son. That parable has been very much overworked in the interest of universal salvation. It, indeed, indicates the attitude of the Father toward a returning son. But it indicates not only the attitude of the father but also that of the son. This is overlooked by universalists. The attitude of the son is, "I will arise and go to my father and will say unto him, Father, I have sinned against heaven and before thee, and am no more worthy to be called thy son: make me as one of thy hired servants." (Luke 15:18,19.) There are some who evidently do not take that attitude. Christ says, "No man cometh to the Father but by me." (John 14:6.) One of his saddest wails is, "Ye will not come to me that ye might have life." (John 5:40.) God will not say one thing by his

Son and the inspired apostles, and a contradictory thing to the consciousness—so-called—of any man of to-day.

Of the same nature is the idea of an "inner light." It may be right, it may not be. If it reveals ourselves to ourselves in the same way that the Bible does we may be sure that it is correct. One thing that the experience of the centuries has confirmed is the statement, "Thy word is a lamp unto my feet and a light unto my path." (Ps. 119:105.) But we have a strong hint that one may imagine that he has an "inner light" that is not light, for Jesus says, "If the light that is in you be darkness how great is that darkness." (Mat. 6:23.)

Some of the most monstrous departures from the Christian faith and practice have been occasioned by a supposed "inner light." The reason for this the apostle Paul makes clear, "And no marvel; for Satan himself is transformed into an angel of light." (II Cor. 11:14.)

It is not safe for a captain to remain in his cabin and steer his vessel by the light in that little room and disregard the lights that are in the heavens.

The Bible professes to reveal a knowledge of things which the unaided human intellect could never ascertain, such as a knowledge of God, of his nature, a future life, and the way of salvation. In thousands of instances where men have found out truths they have confirmed the teachings of the scriptures. Men are appealed to as authorities upon subjects which they are supposed to understand. The Bible should be respected as an authority upon the subjects of which it treats. At least it is safer than human imaginings. In matters pertaining to God and his relations to men the Bible is an authority for instruction. In its presence an egocentric theology cannot stand.

## CHAPTER XI

### *The Bible As An Authority to Be Obeyed*

**I**N numberless instances the commands and precepts of the Bible are found to be but a revelation to men of eternal principles that inhere in the very nature of things, to which men must conform their lives in order to be in harmony with the universe or to get any good out of it. They are given in the same spirit with which a parent would command a child not to eat poisonous berries, the nature of which the child could not understand. Men are not so wise as many of them think that they are. They need guidance more than many of them think that they do. They cannot rely as safely upon their own judgment as many of them think that they can. There are principles in the universe which the Maker of the worlds and the Maker of men knows better than men have as yet been able to know them. The path of obedience is the only path of safety. The first sin on earth was unbelief, the second was disobedience. Men must learn that there is a wisdom superior to their own, that there is a power superior to themselves, that there are laws which they must obey. "Hath the Lord as great delight in burnt offerings and sacrifices, as in obeying the voice of the Lord?" (I Samuel 15:22.) With reference to those occult principles of nature which some commandments require us to observe, we may mention one or two as examples which do not seem at least to be very well understood. One of these is the law of the Sabbath. "Remember the Sabbath day to keep it holy." Is that the expression of a principle of nature that for our own wellbeing must be observed?

All the other commandments in the decalogue are clearly seen to be. Is this a solitary exception? It is in good company. They all come from the same source. He that said, "Thou shalt not kill," said also, "Remember the Sabbath day to keep it holy." There is evidence that it was made for men and when man was made. At least there is evidence that it was observed centuries before the time of Moses. It is said that a Chaldean account of creation has been discovered which confirms the statement that the Sabbath is coeval with creation. Other tablets have been found that give an account of the Sabbath which were written in a language that became extinct two hundred years before the time of Moses. It seems as if there must be some reason for it that the superficial observer does not see. God expressed His estimate of the day by commanding a man to be put to death who had willfully violated it. All admit that it is of use as a day of rest for the body, but even in this respect the value of a conscience-bound day of rest is not fully appreciated. One can rest when his conscience forbids him to work as he could not were the time not so bound.

Utilitarian arguments along this line are urged for its observance. They are good as far as they go and perhaps they are the only ones that can be used to secure legislation for Sabbath observance, but there are other considerations for those who wish to develop their spiritual natures, and after all these are of supreme importance. Even steel tools require an occasional season of rest. But if our bodies were so made as never to need a moment's rest, the law of the Sabbath would still be as necessary for our spiritual natures as it is now. Seen from one stand point, it would seem to be even more

necessary. A clock with the most perfect machinery, the most perfectly oiled, and with heavier weights would the more need a pendulum to keep it from running too fast. So the Sabbath has its moral use in stemming for a time the onrushing spirit of worldliness that is finally so destructive of happiness.

We need a day when free from the work and worry of life we can hold communion with the Father of our spirits. Even if our bodies never needed rest, our spiritual natures would need stated seasons of refreshing.

Men need the law also as a test of faith and obedience. As before noted, the first sin was unbelief, the second disobedience. The same test is still proposed to all; "Will you believe God's word and obey, or will you disbelieve and disobey?" It is a test of loyalty to One who is infinitely our superior. It is also a test of fealty. Will you be true to your sovereign Lord?

But perhaps one of its most important uses is that it places a check on the spirit of avarice that so often makes riches a curse. The law of tithes acts in the same way, and one does not have to look very far into the nature of things to see the divine wisdom in that law. It is not that riches are a curse to their possessors or to others when held with a right spirit. When God made the animal frame he planned that some organs, as heart, lungs, kidneys and other organs, should receive indefinitely more blood than many other organs, and that too was for the good of the whole system. In organized society it may be as essential that some persons have vastly more of the circulating medium than others in order to carry on those vast enterprises that are for the best interests of the whole people. And it does not follow

that the ones who have the most wealth are the most avaricious or greedy. Abraham was not more avaricious than Lot though he had greater possessions. Elisha was not more avaricious than his slave Gehazi.

Many men have been given great abilities to acquire and to invest wealth in railroads, telegraphs, pipe lines, ocean cables, manufacturing establishments, and so on, that are an inestimable blessing to society in general. But whether this wealth is a blessing to its possessors or not depends upon the spirit of loyalty to Him who gave them the power to get wealth and whose stewards they are.

Misquotations of scripture are common, such as "Money is the root of all evil." Money is the circulating medium, the blood of society without which organized society could not exist upon any extended scale. "The love of money is the root of all evil." That is another misquotation. The love of money is a divinely implanted instinct to serve as a stimulus to that exertion that is necessary for man's well being. It is only when one is driven by it to transgress the supreme law of benevolence, to violate the fundamental law of love to God and our neighbor that it becomes a curse. Then it becomes that "covetousness which is idolatry." That is the teaching of Paul to Timothy, "Which while coveted after, they have erred from the faith, and pierced themselves through with many sorrows." (I Tim. 6:10.)

It is only when the instinct causes one to transgress the "First and great commandment" and the other that "is like unto it" that it becomes an evil. Now if in the acquiring of wealth one would faithfully observe the law of the Sabbath as an expression of love and fealty to God, give a reasonable proportion of his income as an ex-



pression of his love for God and his fellow-man, it is as plain as an axiom that riches would never be a curse to their owner.

That, then, which seems to the superficial thinker to be a mere arbitrary dictum of a superior power becomes the divine prescription for happiness with wealth. There may be many other instances of the same nature.

But without waiting to question the nature of a command or precept, men should obey. No man is fit to command who has not first learned to obey. The first principle of obedience is obedience to God. The Bible is His word. It is an authority to be obeyed. It is the voice of superior wisdom, of superior authority. Even Christ will be obeyed. "If ye love me keep my commandments," is his declaration.

## CHAPTER XII

### *The Reasonableness of the Christian's Faith*

**T**HIS receiving the scriptures as an authority to be obeyed involves faith in them. Is this a reasonable attitude? Is faith in general reasonable? Is the Christian faith as a system reasonable? A mistaken notion prevails that would answer these questions in the negative. "Faith and reason are contradictory terms," once declared a very intelligent man to the writer. But if that be true, there is no reason used in society today, for all of our activities are based upon faith. Civilized society is built upon faith. If that foundation should give way not only would organized society disappear but death and destruction would hold carnival. No banking house could survive a failure of faith in it. Few commercial houses could survive even a limited failure of public confidence in them. If all faith on the part of the people should fail, governments even could not exist. Are people, then, all of the time violating the dictates of reason? No. When conditions warrant faith it is not reasonable to withhold it. It is reasonable for a man to have faith in a wife who has through long years been true to him. A lack of faith would indicate a culpable spirit of jealousy. It is reasonable to trust friends who have always been true to us. Even when there is so much crime committed as there is at present, it is not reasonable to entertain a pessimistic lack of faith in men. These propositions need only to be stated to be received. If confidence in men is reasonable, confidence in God is equally so.

Said the aged martyr Polycarp, "Eighty and six years

have I served him and he has never done me any harm." With equal truth he could have said, "He has never deceived me." Millions of men and women in all ages have found that "The steps of faith fall on the seeming void but find the rock beneath." The Christian's faith is not a blind, unreasoning credulity, at least it need not be. At the outset the required faith need only be a right attitude of the will with reference to the truth or to what may be truth. This attitude is what the apostle refers to in Hebrews 11:6. "Without faith it is impossible to please him: for he that cometh to God must believe that he is and that he is a rewarder of them that diligently seek him." Human experience has shown that the required faith need not be very strong—only just enough to apply the required test, and a faint faith may be changed to positive knowledge for it is written, "And ye shall seek me and find me when ye shall search for me with all your heart." (Jer. 29:13.)

That is a reasonable requirement. Further than that, owing to the fact that man is a free agent, it is a necessary requirement. It is no more reasonable to dispute the existence of God without applying that test than it was for people in Galileo's time to dispute the existence of Jupiter's moons while refusing to look through the telescope to find out the truth.

The existence of a personal God is the fundamental proposition in the Christian religion. It is reasonable to believe in him. Admitting this, every objection to miracles falls to the ground. The universe itself is proof of the most stupendous miracle. A short time ago as God counts time, where the solar system now is there was nothing. But God by the fiat of his power and wisdom caused the worlds to spring into being. That was a stu-

pendous miracle. Admitting that, no miracle is incredible where a moral exigency requires one. The resurrection of Jesus the Christ from the dead was one of those exhibitions of divine power where a great moral exigency—the salvation of men—required it. It is reasonable to believe it upon the authority of witnesses whose testimony has come down to us. Other miracles are equally credible when we admit the fundamental fact to which the whole creation testifies, “In the beginning God.”

There are mysteries in religion as there are in every thing around us. We cannot take more than a step or two in any direction in the physical sciences before we are plunged into mysteries that we cannot solve. Men quarrel with the doctrine of the trinity of God, but readily admit the trinal entity of man which is just as mysterious, just as intellect-transcending. If we admit the latter fact upon the authority of men who have studied men, it is reasonable to accept the trinity of God upon the evident teachings of God himself.

Some of the scripture teachings that seem mysterious are greatly if not positively confirmed by the facts of our everyday lives, as those concerning a future life. We need not cite passages, they are so common. But we need not depend entirely upon them for they are not the only evidence. They should be received as evidence, but they are greatly strengthened by the experiences of our everyday lives. Men have not made enough of common sense arguments in this matter. They stand uncertain, doubting, fearing or hoping that the scripture teaching is true, while the teachings are confirmed by facts. In answer to the question, “If a man die shall he live again?” we may answer confidently, “yes.” When

the protomartyr Stephen was about to die, it is stated that he "looked steadfastly into heaven and saw the glory of God and Jesus standing at the right hand of God." The martyr himself exclaimed, "Behold I see the heavens opened and the Son of man standing on the right hand of God." (Acts 7:55,56.)

We do not have to go back to apostolic times for incidents like that. We have them in our own day in numberless cases that make more credible the story in the Acts, and that confirm our own faith in the future life. The companion of my own earlier life, a little while before she passed into the unseen, with a radiant smile upon her face said, "I see my dear Jesus." Jesus said before he went away, "I will come again and receive you unto myself, that where I am there ye may be also." It is reasonable to believe that he kept his promise.

Only a few months since one dear to the writer as life itself was about to pass into the unseen, when her pain-racked features lighted up, and she exclaimed, "Beautiful, so beautiful." "What is so beautiful?" was asked. "All heaven," was the reply. Stephen saw the heavens opened and so have many in more recent times.

Some years ago the writer had three little sisters pass away by that terrible scourge, diphtheria. The first one to go was Alice, the youngest, who was five years old. The night before she died she said, "I want to go up, I want to go up and sing with the angels." Viola, aged eight years, was the next to be called. She died looking up and talking to Alice. Elsie, aged twelve years, went next. A little while before she passed away she said, "I have seen Alice and Viola. They are dressed in white and have crowns on their heads. They are coming to meet me and Alice has a crown for me. The river is

cold but I shall soon be there. The Savior beckons to me with his hand to come."

Surely, "Out of the mouth of babes and sucklings hast thou perfected praise."

Another incident. A cousin of the writer was nearing the end of her earthly life. She spoke of seeing friends who had gone before and among them her father and mother and one whom she did not know. She described a boy who was at once recognized by the older sisters as a brother who had died when she was too young to remember him.

Such incidents might be multiplied indefinitely. The few related above are some that have come so near us as to be almost a part of our own personal experience. A missionary writing from China speaks of the triumphant death of a convert—a man—who had such visions of the unseen world. He (the missionary) said that such experiences were very common and the danger was that if one should pass away without such visions his friends might doubt the genuineness of his conversion.

What shall we say of these things? Are they the illusions of those whose faculties have been weakened by approaching dissolution? That cannot be. Stephen had his vision of heaven before the first stone was thrown, and he was stoned to death partly because he had such a vision and told of it. My companion had her vision of Jesus the day before she went to him, and all of the time before and after she was as rational as she ever was.

It is hardly reasonable to try to account for the other experiences on the illusion theory. The learned may smile and skeptics may doubt, but the most rational explanation is the one on the face of them, that is, they are facts. Some who are passing to the unseen are permitted



to see a little that is before them for their own encouragement, and to tell what they see for the comfort of those who are left behind, and also to strengthen their faith in the scripture teachings concerning the future life. Skepticism regarding such incidents is not wisdom. But there is truth in what the Duke of Argyll says in a paraphrase of a sentence from Bacon, "From the unlocking of the gates of sense and the kindling of a greater natural light, incredulity and intellectual night have arisen in our minds." It is wiser to accept facts of whatever nature and from whatever source they may come and pray with Bacon, "This also we humbly beseech thee that human things may not prejudice such as are Divine, neither that from the unlocking of the gates of sense, and the kindling of a greater natural light, anything of incredulity or intellectual night may arise in our minds toward Divine mysteries."\*

---

\*Bacon, quoted by the Duke of Argyll in *Reign of Law*, Chapter I, p. 3, foot note.

## CHAPTER XIII

### *Individual Attitude*

**I**T is a common supposition that a person who accepts the Bible as an authority for instruction, together with such corroborative evidences as the above, is necessarily of a credulous nature, and ready to accept without question anything that is presented. This is not the case. In general, the wisest philosophers, the most profound students of science, the greatest men generally have been the firmest believers in God and his revelation to men.

With reference to himself, the writer may be pardoned here for speaking in the first person in defining his own attitude for the double purpose of refuting the common opinion referred to above and of giving a brief narrative of personal experience. A few pages concerning my own life may not be out of place, especially when they are written from a sense of obligation and in the spirit of Paul, who, when about to introduce personal matters wrote to the Corinthians, "Would to God ye could bear with me a little in my folly, and indeed bear with me." (II Cor. 11:1.)

Probably no skeptic was ever more opposed to receiving religious truth upon the authority of others than I have always been with reference to everything that is presented for acceptance as truth. No sentinel on duty was ever more strict in challenging an approaching stranger than I have always been in scrutinizing everything presented for me to believe. I confidently believe that I never took a statement that could properly be questioned, from teacher, preacher, lecturer or author

upon mere authority. Even text books which I used in school and college were never exempt from scrutiny. Such expressions would occur as "the hot air rises and the cold air rushes in to fill the vacuum that would otherwise occur." No, I could not but say to myself, "that is not correct." If I were to put a piece of iron into a vessel and then pour in mercury the iron would not rise of its own accord and the mercury rush in to fill a vacuum. The iron would be forced up by the heavier mercury. No more does the hot air rise of its own accord. It is forced up by the heavier cold air. Sound was likened to waves on the surface of water. No, it is the transmission of unequal densities through a medium rather than wavelets upon the top of one. In physical geography the saltiness of the oceans was accounted for by the rivers constantly emptying into them. It is admitted that there is not much salt in fresh water streams, but, it is contended, there is a little, enough to salt the ocean in time. But a moment's mental calculation shows that there is enough salt in the oceans to cover the whole land surface of the earth hundreds of feet deep. Why suppose that it was once all piled up on the land?

Upon reading a statement a short time ago that from the top of a certain mountain a party could see a place 250 miles away, the question instantly arose, Would the curvature of the earth allow one to see that distance? Again a moment's mental calculation showed it to be impossible, and that the 250 miles must refer to the circuitous paths they would have to traverse in order to reach the place mentioned.

These instances but illustrate an habitual attitude of mind from my earliest boyhood.

While yet a boy I heard the principal of an academy

ask a class that was reciting to him, "What would be the motion of a body falling through the earth?" Some said one thing and some another, but the teacher finally closed the discussion by saying, "It would stop at the center." I thought to myself, No, there is nothing to stop it there, and after a few moments' thought I saw that it would go on through to the other side of the earth and continue to vibrate in accordance with the law of pendulum vibration. It was fully 35 years before I knew that any one else had conceived the idea. At the time I saw it as if by intuition though I afterward demonstrated it.

It is in accordance with that principle that I afterward reasoned that the interior even of the sun may be cold and solid and that the interior of the earth and other planets may be the same.

When the theory of the correlation and conservation of forces and of the mechanical equivalent of heat was first brought to my notice I rejected it, but, as usual, I investigated it. I calculated the effect of a certain amount of heat acting through different substances. The result seemed to sustain my first opinion, for the *visible* effect was only from one-half to one-thirtieth of the producing cause. At least, if my calculations were correct, from twenty-nine thirtieths to one-half of the force was exhausted in overcoming the cohesion of gases (Tyndall) or in some way it was tangled up with the intermolecular forces.

When the effect of the tides in retarding the earth's axial rotation was first suggested, it received the usual challenge, but a little thought convinced me that the idea was correct, and I at once used it, to account for the rate of the moon's axial rotation. Of course its present rate may have been its initial rate of rotation. But whether

its rate were faster or slower, if there had been any considerable body of water on it its present rate would have been produced by its tides.

In 1872 the nebular hypothesis was brought forcibly to my attention, and it received a peremptory challenge. I suggested to my teacher in mathematics that I believed that I could prove mathematically that it was impossible for a nebulous mass so to contract as to produce the planets with their present motions. But sitting down one evening to the task I found the opposite to be the case, but concluded that contraction must have been exceedingly rapid. (See above.) That was the beginning of my study of cosmogony, and I may state that every principle in the preceding section upon this subject was an original discovery, though many of them have been since confirmed by the authority of others.

So also when the theory of organic evolution came up for consideration it naturally and necessarily was subjected to the same scrutiny, and with the results recorded in the preceding pages.

Again I state that these things are mentioned simply to show my habitual or rather natural attitude toward everything that is presented for my acceptance. I am not easily overawed by the reputation of any man, and have long had the habit of investigating for myself statements made even by specialists in their own departments.

It was owing to this irresistible tendency to investigate that I demonstrated Kepler's Third Law in my own way and the effect of ellipticity of planetary orbits upon the operation of that law.

It is hardly necessary to say that with such a constitutional make-up, religion would not be accepted with an unreasonable credulity. For some years I was a skeptic

Not that skepticism was the outcome of logical processes, but such a mind as I have described is the soil in which skepticism, like a fungous growth, naturally flourishes.

When in a season of religious awakening a friend spoke to me upon the subject of personal religion, my reply was to the effect that the phenomena of religious experience were in accordance with natural laws. That is, the laws of mind acting in conjunction with certain influences from without could produce such phenomena. Given a certain temperament or mental constitution that could respond to the appeals of supposed truth such phenomena were possible. But I supposed that my own mental make-up was not of that kind, and that however much I might desire it, I could never undergo such experiences.

Even then (two years before entering college) I could see far enough over into the domain of "The Reign of Law in the Spiritual World" to know what the Duke of Argyll referred to when he wrote, "I had intended to conclude [his book, *The Reign of Law*] with a chapter on Law in Christian Theology. \* \* \* \* For the present however I have shrunk from entering upon questions so profound, of such critical import, and so inseparably connected with religious controversy."

Again, I make this statement to show that it was not from mere credulity that I accepted Christ as a personal Savior. I found that there are two ways out of skepticism. One is by the study of the evidences of Christianity. This course, if one has the mental power to comprehend them, will remove intellectual doubt.

The other way which is quicker and more satisfactory, because more life-giving, is simply to take the right attitude of will, or, in popular language, to open the heart



to receive God, and He will come in and bring all the evidences any one can need. That was my own way. It was satisfactory. It not only removed doubt, it produced certainty as to some vital things. There are certainties in the religion of Christ.

I advise young Christians to reach as many of these certainties as possible and as soon as possible. We may know as well as believe. The object of this little volume is to help reach some of these certainties.

## CHAPTER XIV

### *An Individual Experience of God Present and Guiding*

**F**OR many years before I was converted, I had a strong conviction that if I ever became a Christian I should have to be a minister of the gospel. This was occasioned by an elder sister's telling me, while I was but a child, that it had been revealed to her that I was to be minister. My whole being revolted at the idea. When a little older I wanted to study law, and while a private soldier in the civil war I carried around with me, in my knapsack, the two large leather-bound volumes of Blackstone's commentaries to read as I had opportunity. When I accepted Jesus the Christ as Savior I accepted him also as Lord. I must do his will and work. I tried however to shake off the old impression, and to believe that I could serve my Master and still pursue my own inclinations as to my life's work. It was a question that must be settled with greater certainty than by a mere impression, however strong. There were a number of other questions closely allied to this fundamental one that must be settled, so that in after life there would never be any vacillating or halting. I wanted to be guided with absolute certainty to the right course. The secret of God's guidance has always been a secret between Himself and me. "The secret of the Lord is with them that fear him." Friends sometimes have secrets between themselves that it would be a violation of confidence to tell to any one else. This was a secret that I always felt that it would be sacrilege to reveal. It may have been owing in part to constitutional reticence, but I am sure that it was owing more

to the fear that others would not regard its sacred character as I regarded it. Very few, I felt, would unreservedly believe it, and incredulity on the part of others would be revolting to me. In a few instances in the past it has seemed that I might make some revelation of it for the benefit of others, but the impulse, "It's a secret that must not be revealed," has always restrained me. It has been only very recently that I have felt relieved of that restraint, and a conviction that I ought to speak of it as proof that God is near, has taken its place. Hardly a veil intervenes between Him and us. He is ready and willing to guide his children when they seek his guidance.

But first I may speak of the experience of another as really a part of my own, for it was that which first determined my own course. A gentleman, the one before referred to as the one who spoke to me about being a Christian, narrated to me an experience of his.

There was no injunction of secrecy, but I have never mentioned it to any one. His wife had died and left him with a family of little children. He had no one to help him in bringing up those little ones. He felt that he must have a companion, and a suitable one, and so resolved to leave the matter to the Lord.

He wrote the names, on separate slips of paper, of all of the ladies of his acquaintance who were eligible, put them in a receptacle and was about to draw when he remembered one whom he had met but once or twice and who lived in a distant part of the state. He added her name, and prayed most earnestly that God would guide his hand. He drew, and drew the name of the one last mentioned. He replaced it in the receptacle and prayed again that if she were the one chosen for him, he might draw the same name a second time. He drew, and the

second time drew the same name. Again he replaced the name in the receptacle, shook them up thoroughly as before, drew, and for the third time drew the same name. All doubt was now removed. He made the journey, visited her in her father's home, and, as he was certain that he would do, took her home with him his wife.

This incident gave me faith to let the Lord determine my future course by directing the lot. "The lot is cast into the lap; but the whole disposing thereof is of the Lord." (Prov. 16:33.)

Of the disciples it is said, "They prayed and cast lots." Some may think that they thus left the decision to chance. No, it was leaving it to the Lord. If one intended thus to leave it to chance, chance would decide the matter. But if one is Spirit-moved to leave it to God in that way, God will decide. At least that proved to be my experience.

One of the first questions submitted was, Shall I go on studying law? The answer, three times in succession, was, no. Another question was, Must I preach the gospel? After the most earnest prayer for guidance and for God's forbearance, after the first throw of the die, the answer three times in succession was, yes. I may say that in no case could the answer be accepted until the die, after the most earnest prayer before every cast, had made the same answer three times in succession. The question, Shall I take a course of study? was similarly answered in the affirmative three times in succession. Shall I go to——school? Again the answer, three times in succession, was yes. In all, some twenty questions, involving some sixty throws of the die, were thus answered without confusion or contradiction.

And not only were the most important questions

settled in that way but some which to the general reader, would seem of small consequence.

I was teaching a school one winter, which, by the public road, was about fourteen miles from home, but by going a part of the way by logging roads, across fields and forests, and crossing the river on the ice, I could reach it by nine miles' travel. I went home quite frequently and always by the shorter route, starting Friday after school. One Friday afternoon was clear and warm. The snow was melting and the slush was deep, making the walking very difficult. If the weather continued warm my overcoat would be only a burden. Should I take it? The lot, as usual three times in succession, answered, yes. I took it. Friday evening was warm and pleasant. Saturday was like a balmy spring day. Sunday forenoon was just as warm. I began to question with myself whether I had not been misguided for once. The weather speedily answered. It suddenly turned most bitterly cold with a biting wind. We lived in the country and it would have been difficult if not impossible to have bought or borrowed a coat. If I had not taken my own I should have suffered even if I could have endured that nine mile walk.

I may say that never have I had an instant's doubt as to the wisdom, the benevolence of every answer so received. Although in many cases it cost a terrible struggle to obey, the years have shown that the decisions were directed by a wisdom infinitely greater than my own.

One of the strange things connected with the matter is that no answer was satisfactory to me until the die had given the same answer three times in succession. I never did, I never *could*, abide by the decision of the first or second throw. But when the third answer confirmed the

first and second, the decision was absolute. But why three times? I will not try to say with certainty, but one thing is certain. The first answer might have been attributed to chance. It would not be impossible for a second answer to come in the same way. But it would be unreasonable to attribute a third answer to chance.

God never seemed to reprove me for lack of faith in not accepting his first or second answer as final. He was willing and wished to prove beyond a peradventure that it was Himself and not chance that was guiding me. Of this he gave reasonable proof and he asks nothing unreasonable of any one. He was willing to answer three times. He probably expected me to ask three times. "In the mouth of two or three witnesses every word shall be established."

With reference to his expecting one to ask three times, an incident from India is suggestive. Very much abridged it is as follows:

In one of his long missionary journeys the Rev. Jacob Chamberlain, with a party of about fifty men, found himself in a most dangerous position. They were traveling parallel with the Godavery river and about a mile from it, through a jungle infested with man-eating tigers and the still worse malaria that might prove fatal with a single night's exposure. They had expected to reach high ground beyond an affluent of the river, but owing to high water they could not reach it. He silently prayed for deliverance. The answer came in a kind of inward voice, "Turn to the left and go to the Godavery." He rode to the front and questioned the guides, but found that there was no village, no house, no boat, not even a piece of high ground where they could safely pitch their tents in that direction. He fell to the rear and again



sought help from God. Again the answer came, "Turn to the left and go to the river." Again he consulted the guides with the same result. The third time he prayed, as life depended upon it, and the third time he received the same answer in the same way. This time all doubt vanished and he ordered his men at once to turn to the left and cut their way to the river. But there was no need to cut their way, for just then they struck an old path that led directly to the river. Here they found a large flat boat, large enough for their tent and the whole company. On this they spent the night in safety, and on it pursued their journey the next day. But the point is that it was after the *third answer* that they struck the only path leading to the river.

Some of the world's wise ones may smile with incredulity, but, "It is written, I will destroy the wisdom of the wise and will bring to nothing the understanding of the prudent." (I Cor. 1:19.) Our Savior prays, "I thank thee, O Father, Lord of heaven and earth, because thou hast hid these things from the wise and prudent and hast revealed them unto babes." (Mat. 11:25.) "If thou scornest, thou alone must bear it." (Prov. 9:12.)

The question may arise as to whether any and every one can be guided in the same way as I have mentioned in my own experience. Probably not, but still I believe that the guidance may be in accordance with the measure of faith. But faith in a particular direction may be an especial gift for a specific end. The twelfth chapter of First Corinthians is suggestive along that line. "For to one is given by the Spirit the word of wisdom; to another the word of knowledge by the same Spirit; to another faith by the same Spirit," and so on. (See 4-11.) "Are all apostles? Are all teachers? Are all

workers of miracles? Have all the gifts of healing? Do all speak with tongues? Do all interpret?" "No," is the implied answer. But as the apostle before said (see verse 11), "But all these worketh that one and the self same Spirit, dividing to every man severally as he will." It is not always as the individual may choose, but as the Spirit wills. But I believe that many more might have guidance in the same way if they were earnest enough to know God's will, that they might do it. As in some other cases, doing is necessary to knowing. For guidance in that particular way the obedience must be implicit, uncompromising, absolute. But in one way or another one may be conscious of the Spirit of God as present and guiding. With me that particular manner of guidance was pursued but for a short time. After those vital questions were settled beyond the possibility of a doubt and, too, after such lessons as to God's presence and guidance, I was thrown more upon my own responsibility to use my own judgment in matters of duty. Still there has never been lacking an assurance of Divine guidance when needed and asked for.

A growing conviction of duty in some particular regard is often, perhaps always, a call of God. One may have at first a kind of vague suggestion as to some possible duty, not strong enough of itself to form a positive conviction. But when that is repeated with increasing force, month after month, perhaps year after year, the call may become imperative. My own experience, again, may be suggestive to others. Months, perhaps a year or so, before preparing my little book, "Jesus Only," I had a slight impression that I ought to prepare a book with that title. With the passing months the conviction became stronger until it became so strong that I felt that

it must be obeyed. I felt tired, worn out, and greatly desired a change of pastorate for relief. I had not come to a positive conclusion concerning the book, but one evening, on my way to my room, I halted for a moment in the doorway and mentally promised God that if he would give me another field I would write such a book. No audible voice could have been heard more plainly or have produced a stronger impression than the reply in my consciousness, "Why not write it before you move?" My own answer was instantaneous, "Lord I will." I finally redeemed my promise and a few months after its publication the book itself caused me to receive a call to a field that in my physical condition at that time was ideal.

Sometimes I have had a feeling of rebellion, thinking that other people have talents that are of value, while I have only the one little talent of a certain power of abstract thought, and I have been tempted to say, "I will *not* use it." But while at work at something else the impression would come as strong as any audible voice could have made it, "Burying your one little talent." Again it would be, "Despising your birthright." And in that manner I have been urged to take up and continue the work. I believe that such promptings have come from God. My former experiences of His directing me lead me the more positively to that conclusion.

But there is another way in which God speaks to us and that is through his printed word. Here, again, it is my conviction that many Christians do not secure all the privileges that are at their disposal. How many, many times when I have wanted courage or hope, comfort or inspiration, I have opened my Bible at random and have found just what I have needed. Indeed, when

really in need, the word has never failed me. Sometimes the recollection of a passage of scripture has served the same purpose.

Once, years ago, when in trouble and with some anxiety as to financial matters the passage came to me, "Trust in the Lord and do good, so shalt thou dwell in the land and verily thou shalt be fed." (Ps. 37:3.) It was like the voice of God addressed to me individually. It became my life motto and ever since then my chief concern has been to do the work that He would have me do and leave the results with Him. At least that has been the attitude of the will, my purpose which has prevailed in the profounder depths of life, though, in spite of this, the surface is often sadly ruffled.

When feeling wronged there is an instinctive desire for revenge. But the passage, "Vengeance is mine, I will repay, saith the Lord," (Rom. 12:19.) will check that desire, and place in its stead the prayer, "Lord, this concerns Thee more than it does me, take the matter into Thine own hands, but temper justice with mercy." The result is a calm, settled peace with reference to the matter, which is vastly more conducive to happiness than cherishing a purpose to seek revenge would be.

The voice of God comes to us in remembering or reading the written word of God, the Bible. An incident to illustrate the latter.

On one occasion I had been reading Dr. Behrends' book, "The Old Testament Under Fire." I was myself a little disturbed in mind as to the outcome of recent criticism and was about to retire for the night. I had gone about half way up stairs when a strong inward impulse came, "Go back and read a passage of scripture." I was about to disregard it and go on, but it came again,

"Go back and read a passage of scripture." I returned asking myself what message there was for me. Opening my Bible at random my eyes fell upon the twelfth Psalm. I read the first few verses and thought that there was nothing in particular there, but in the 6th and 7th verses I read, "The words of the Lord are pure words: as silver tried in a furnace of earth, purified seven times. Thou shalt keep them, O Lord, thou shalt preserve them from this generation forever."

There was my message. The words were a revelation and an assurance. Why, I thought, it was no new thing, even in David's time for the word of God to be under fire, to be tried as in a furnace of earth. And, by the way, there may be a good deal of the earthly element now in the trying of the word of God.

But the assurance that sustained the Psalmist is encouraging still. "Thou shalt keep them, O Lord, thou shalt preserve them from this generation forever."

These are a few instances of a great many in which the printed word has been not only a guide but a source of encouragement, of hope and instruction. The word of God in its simplicity, as it reads, is an authority for instruction. It is more, it is life giving. I am assured by my own experience that it is not dogmatism to say that the Bible is God's word. And my experience is not unique. It is the testimony of the experience of multitudes in all ages and climes. The Bible not only contains God's word, mixed up with a mass of verbiage of human authority, leaving to each reader the responsibility of picking out God's part, but as a whole it is God's message to men.

## CHAPTER XV

### *The New Life From God*

**I**N a preceding chapter (VII) we touched incidentally, and only in connection with another subject, upon the nature of that life which those possess who by accepting Christ have received subjective salvation. But this subject deserves a more extended consideration than was there incidentally given it.

Jesus says, (John, 10:10) "I am come that they might have life and that they might have it more abundantly." In these words He defines His mission to the world. With reference to the human race, everything else in His life, death and resurrection was subordinated to one end, contributory to the one purpose of giving life to those whom He called His sheep. And it is surprising, when we come to consider it, how much He has to say about life, and of Himself as the giver of life—how much He has to say about eternal life, everlasting life and of Himself as the one who bestows it. But He was not moving among dead bodies, He was not talking to dead bodies. So the natural life, of course was not meant. It is apparent also that He did not refer to a mere continuance of existence after the spirit of man had left the body. This continuance is admitted by him and he taught it. In one sentence he speaks of a future life for both the righteous and the wicked, "These shall go away into everlasting punishment, but the righteous into life eternal." Daniel says that they shall "awake, some to everlasting life and some to shame and everlasting con-



tempt.” Paul also speaks of the resurrection of the just and of the unjust.

The immortality of the spirit of man, both of the wicked and the good was admitted in Christ's time, and has been a fundamental doctrine of the Christian church during all of the ages of its existence. What, then, does he mean when he says “I am come that they might have life?” The fact seems to be this: there is a kind of life that is different in kind from the common mortal or immortal life of man. It is different in kind, and not simply in degree or duration. All men have an immortal spirit and that without regard to character. But the life that Christ speaks of is as different from that, as the immortal life of man differs from animal or as animal, differs from vegetable life. The facts seem to be that when man was created he was endued, not only with an immortal spirit, but with a life principle that partook of the Divine nature. He was made in God's image, in His likeness. When man sinned that life was extinguished. And here is a suggestion as to the effect of that sin. It extinguished the divine life, and no created being can beget in his offspring a different kind of life from that which he, himself, possesses. After man had lost that divine life he could not beget it in his offspring. So it is a literal truth that “in Adam all died.” Not one of his race could have by inheritance that true, that divine life that allied him to God. If he or any of his descendants were to have that life it must be created in him anew. So “if any man be in Christ he is a new creature.” He has a new life created within him.

To restate the proposition. When man was created there was a life principle within him that was termed by Christ eternal life or everlasting life. It was a life prin-

ciple entirely distinct from his common human life. It partook of the divine and allied him to the Divine author of life. It was of a kind that would produce Godlike living, develop a Godlike character. It was of this kind of life that the death sentence was pronounced upon disobedience. God said to Adam, "In the day that thou eatest thereof, thou shalt surely die." But Satan said, "Thou shalt not surely die." Which was right? That depends upon what we mean by the term death. The separation of the life principle from the tree is death to the tree because it is the extinction of its life. The separation of the life principle from the animal is death for the same reason, there is an extinction of life. The separation of the immortal spirit from the man is called death, but only by way of accommodation. There is no extinction of a life principle. That goes on living independently of the body. If this separation were the death spoken of, then Satan was right, for that separation did not take place until about 900 years afterward. But if the extinction of the divine life principle were referred to then God was right. The life principle that allied Adam to God, that would develop Godlike character, Godlike living, became extinct and that was death in an infinitely more important sense than the mere separation of the spirit from the body. That the divine life had gone out was shown by the conduct of our first parents after they had sinned. Instead of loving God and His companionship as before, they feared, hated, shunned Him. They were dead as to the divine life.

That declaration, "in the day thou eatest thereof thou shalt surely die," with its fearful realization, helps us to understand his meaning in other places. But before considering these, note that the first sin was unbelief and the

result of that was disobedience. Man lost the divine life by unbelief and disobedience, he can regain it only by reversing the process, by believing and obeying.

Now with this view of spiritual death and eternal life, observe the light it casts upon certain passages of scripture and how these same passages tend to confirm the view itself. "I am come that they might have life." It was not necessary for Christ to impart a life that they already had. He must have meant something entirely different from the natural life. He refers to eternal life as He elsewhere says, "I give unto my sheep eternal life." "The gift of God is eternal life." Or, changing the order for clearness, "Eternal life is the gift of God." (Rom. 6:23.) It is a new imparting of a life principle. Note again, "she that liveth to pleasure is dead while she liveth." (I Tim. 5:6.) Again, "To be carnally minded is death." (Rom. 8:6.) Thou hast a name to live but art dead." (Rev. 3:1.) There is nothing figurative, mystical or mysterious about these words. They but express a literal truth, for, so far as the divine life is concerned, those classes are dead. They are dead as Adam was dead as concerns the divine life after his transgression.

"You hath he quickened who were dead in trespasses and sins." (Eph. 2:1.) The word "quickened" means the bringing to life, the giving or imparting of life. All were dead as concerned the divine life that Adam lost by sin. Paul again says, speaking of God who is rich in mercy, "even when we were dead in sins hath he quickened" or given life to. (Eph. 2:5.) He uses the same words in his letter to the Colossians. Again he says, "If any man be in Christ he is a new creature." And again, "For in Christ Jesus neither circumcision availeth

anything nor uncircumcision but a new creature." In these passages he can refer to but one thing, and that is the new, the different kind of life that is created within those who believe on Christ.

How is this new life obtained? We have just spoken of it as the gift of God. But Christ also gives it. John says it was by Christ that God made the worlds. It is also through Him that this life is imparted. Jesus Himself says, "for as the Father raiseth up the dead and quickeneth them: even so the Son quickeneth whom he will." (John 5:21.) Paul says, "the first man Adam was made a living soul, the last Adam was made a quickening spirit," or one that imparts life. Christ tells what kind of life, "I give my sheep eternal life." John says of him, "as many as received him to them gave he the power to become the sons of God, even to them that believe on his name: who were born, not of blood, nor of the will of the flesh, nor of the will of man but of God." (John 1:12,13.) John again speaks of that life or of its nature, "Whosoever is born of God doth not commit sin, for his seed remaineth in him and he cannot sin, because he is born of God." (I John 3:9.) A divine nature is in those who are born of God, which they have inherited from their Father.

That is the significance of the new birth. It is the beginning of a new life, a different kind of life from that which they had before. It partakes of the divine and allies one to the Divine. It is thus, as Peter says, that we are "partakers of the Divine nature."

Observe, too, what Christ himself says of this life and of Himself as the author of it. He says to Nicodemus, "Ye must be born again," and note that this was spoken to a rabbi, a member of the sanhedrin, a religious teacher,

a theologian. He had knowledge, influence, position and theology, but all of these availed nothing without the new, the divine life the beginning of which is termed a new birth. But that life must come by believing in Jesus. "He that believeth on the Son hath everlasting life: and he that believeth not the Son shall not see life, but the wrath of God abideth on him." Again he says, "He that heareth my word and believeth on Him that sent me, hath everlasting life, and shall not come into condemnation: but is passed from Death unto life." "He that believeth on me hath everlasting life." "I am the resurrection and the life." "Whosoever liveth and believeth in me shall never die." In all of these passages of what can he be speaking but of that spiritual life that begins with the new birth and makes us the children of God? And, incidentally, note the infinite majesty of one who can use such words and make them good. Note that every promise of this life is conditioned upon belief in Himself. As before observed, every promise of salvation is coupled with belief in him.

And this leads us to consider what we must believe concerning him. The answer is found in his own words and in the facts of history. Jesus says to the Pharisees and those gathered with them, "If ye believe not that I am He," that is, the Messiah, "ye shall die in your sins." But of the Messiah it was written, "His name shall be called Wonderful, Counsellor, the Mighty God, the Everlasting Father, the Prince of Peace." If they did not believe in him as such, they did not believe in him as the Messiah. But they did not believe that he was such, and crucified him because he claimed to be the Messiah. They accused him of blasphemy for "making himself equal with God," as he claimed to be, while they believed him



to be a mere man. Read the history of the destruction of Jerusalem and the subsequent dispersion of the Jews for evidence as to whether they were saved in this world or not. None of those who believed on him as the Christ were involved in that terrible destruction, for believing in him and admitting his claims, they believed his words concerning the coming of that destruction and fled to a place of safety. And this destruction was, evidently, not of a mere temporal nature, for Jesus told them, "Whither I go ye cannot come." And note his denunciations of those classes. Yet they believed that there was such a man as Jesus, they believed that he was the son of Joseph as some now believe in his merely human paternity. Many could not do otherwise than believe that he was a good man, and the only bad thing any of them could find about him was that "he deceiveth the people" in trying to convince them that he was the Messiah. They believed that he wrought miracles also. We read that after the raising of Lazarus, "Then gathered the chief priests and Pharisees a council, and said, "What do we? for this man doeth many miracles. If we let him alone all men will believe on him." (John 11:47,48.) Instead of being convinced by the raising of Lazarus that Jesus was what he claimed to be, they "consulted that they might put Lazarus also to death: because that by reason of him many of the Jews went away and believed on Jesus." (John 12:10,11.) None of them, so far as we know, ever denied the fact of his miracles nor even of the resurrection of Christ, but, with reference to this last, they did all that they could to keep a knowledge of the fact from reaching others, for when the Roman guard reported the facts, "they gave large money unto the soldiers, saying "Say ye, his disciples came by night and stole him away



while we slept, and if this come to the governor's ears, we will persuade him and secure you." (Mat. 28:12,13.) Yes, they most decidedly believed in miracles. They were also compelled to admit that others, also, wrought them through faith in the name of Christ. When the man lame from his birth was healed by Peter and John, and the knowledge of that fact was rapidly spreading and winning adherents to the cause of the apostles, these same priests, scribes and Pharisees, the religious teachers, "conferred among themselves, saying, What shall we do to these men? for that indeed a notable miracle hath been done by them is manifest to all them that dwell in Jerusalem: and we cannot deny it. But that it spread no farther among the people let us straitly threaten them that they speak henceforth to no man in this name." They believed many things concerning Christ, but evidently their belief was not a saving faith nor a belief that would insure eternal life.

Not only did men, wicked men, believe many things concerning him but demons also did the same. We read, "There met him two possessed with devils coming out of the tombs, exceeding fierce so that no man might pass that way. And, behold, they cried out saying, What have we to do with thee, Jesus, thou Son of God?" The faith of the demons went farther than that of many men, but they did not yield a willing obedience to him as their own Lord. James says (2:19), Thou believest there is one God, thou doest well, the devils also believe and tremble." Many, now, believe that there is one God, but claim that Jesus Christ is in no sense that God.

What, then, is necessary? When Jesus asked his disciples who he was, Peter answered, "Thou art the Christ, the son of the living God." Thomas exclaimed

“My Lord and my God.” The true nature of Christ was revealed to them. “Blessed art thou, Simon Bar-jona: for flesh and blood hath not revealed it unto thee but my Father which is in heaven,” was our Savior’s declaration.

That is the faith that complies with the condition, “As many as received him to them gave he power to become the sons of God, even to them that believe on his name.”

Simon Peter is not the only one to whom the Father makes this revelation. He makes it to every one who will voluntarily take the right attitude of will concerning him. And this revelation can come in no other way for, “No man can say that Jesus is Lord but by the Holy Ghost.” And this explains why so many now are like the scribes, Pharisees and others of old. They do not submit to the teaching of the Holy Spirit as to the nature of Jesus. He is Divine. He is Lord with a capital L. He can impart the spiritual life, and does impart it to all who receive him and believe in him as the Messiah as that Messiah was described in the prophecy. To such he imparts the divine life, the life that allies men to God and makes them partakers of the Divine nature. They thus become the children of God because they are born of God. They are the children of God in an entirely different sense than that used so often of late with reference to all persons.

We hear a great deal about the fatherhood of God and the brotherhood of man. There is a great truth contained in that expression inasmuch as that all should treat God as one should treat a father and should recognize the claims of their fellow men upon them. But this rather fictitious relationship is by no means to be confounded with that infinitely higher relationship that exists

between the Father and those who have been "born again," "born of the Spirit," "born from above," "born of God," and by that birth have become the children of God. To such God is a father because He has imparted to them life, an entirely different kind of life, from that which they possessed before.

Those who have been born of God, too, have an entirely different relationship with each other from that of humanity in general.

In this connection it should be emphasized, as has been before stated, that this life is a new creation. "If any man be in Christ he is a new creature." This life is not a development of some other and lower kind of life. A new kind of life has been created within him, or imparted to him direct.

When vegetable life appeared upon our planet it was the result of the creation of that kind of life. That life has produced, perpetuated that kind of life and only that kind of life, namely, vegetable life. When animal life appeared, it was the result of the creation of animal life. Vegetable life did not beget animal life, it only begat its own kind of life, and not only in general but in particular.

Algae life did not beget oak nor cedar nor poplar life. It begat algae life and has continued to do so since the first dawn of life upon the planet. In the realm of animal life, the Eozon life did not beget trilobite, nor ammonite nor ganoid life. It begat and perpetuated its own kind of life and has begotten that kind only, since the first trace of animal life appeared on earth.

The same law prevails in the spiritual world. "Natural law in the Spiritual World" prevails. Science as well as religion teaches this truth. As Prof. Drummond well

says, "No organic change, no modification of environment, no mental energy, no moral effort, no evolution of character, no progress of civilization can endow any single human soul with the attribute of spiritual life. The Spiritual world is guarded from the world next beneath it by a law of Biogenesis—'except a man be born again \* \* \* \* except a man be born of water and the Spirit he cannot enter the kingdom of God.' "

Again the same writer observes, "there is no Spontaneous Generation in religion any more than in nature. Christ is the source of life in the Spiritual World, and "He that hath the Son hath life and he that hath not the Son," whatever else he may have, "hath not life." Again he says, "It is clear that a remarkable harmony exists here between the Organic World as arranged by Science and the Spiritual World as arranged by Scripture. We find one great law guarding the thresholds of both worlds, securing that entrance from a lower sphere shall only take place by a distinct regenerating act, and that emanating from the world next in order above it.

There are not two laws of Biogenesis, one for the natural, the other for the Spiritual. One law is for both."

The spiritual kingdom is as distinct from the animal kingdom as that is from the vegetable, or as the vegetable is from the mineral kingdom. Each has its beginning in a new creation. The Christian is one in whom this new kind of life has been created, and the Christian religion is a system of religion based upon that fact.

There is another remarkable harmony, also, between these two worlds. Note that as in the material world so in the spiritual the development of life is according to

its life principle. In the material universe every living thing follows that law. There are today billions of protoplasmic cells so nearly alike that, as science tells us, no microscopic examination, no chemical tests can detect any difference between them, and yet one developing according to its life principle in a few days will become a blade of grass, another may require thousands of years to mature into a giant Sequoia.

In the animal kingdom, one may at maturity become an oyster, another an elephant. Each develops in accordance with the life principle that animates it.

So when the spirit of man becomes possessed of that life principle that is called by our Lord "Eternal life," that life that comes when one is "born of God," the spirit will develop according to that life principle, but it will not come to its maturity in a day nor in a month nor a year. It may require the "eternal years" for its maturity into Godlikeness. Those who so thoughtlessly criticise the imperfections of Christians fail to recognize this fact. But even in this life the character may mature sufficiently to bear "Fruit unto holiness."

"The fruit of the Spirit is love, joy, peace, long suffering, gentleness, goodness, faith, meekness, temperance." (Gal. 5:22.)

These qualities are not the result of heathen culture, for the fruits of such culture are the direct opposite of these. But the difference between those who have this life and those who do not have it is not so marked in those lands, as Europe and America, in which the genius of Christianity has shed its blessings upon all; like the sun that rises upon the evil and the good, or the rain that descends equally upon the just and upon the unjust. The differ-



ence is more marked in those regions where Christ and his gospel are unknown.

When, by receiving Jesus the Christ as the Son of God, an African has received this new life from God, he is changed from a cruel, blood-thirsty monster in human shape into a man, humble, teachable and yet virile, sitting at the feet of his missionary teacher studying the life of his Master. Through faith in Jesus as the Messiah, savages, miserable creatures who through fear of death were all their lifetime subject to bondage, have received this life and by its animating principle have unhesitatingly laid down their lives for the faith, that they might be the means of imparting the same life to others. There is not a spot on earth, and never has been a spot, so dark, so savage, so steeped in heathenism that it has not been counted a joy for some of Christ's children to make it their home and their grave, if need be, if by that means they might advance the cause of their Redeemer. Such conduct is the outgoing of the life within which has been imparted to them by Him who laid down His life for us. It is evidence that the life that inspires them is the offspring of God and that they are, indeed, the children of God.

Nations are aggregates of individuals. What the individuals are the nation is. As a nation becomes infused with the divine element in the lives of its truly Christian citizens, the evils resulting from selfishness and sin gradually slough off; and so we have the enlightened nations of today as compared with the barbarism that once prevailed. Vice and crime indeed abound, but they prevail in individual lives that have not been touched by the Divine life. These vices and crimes are hideous and in many instances surpass those of darker lands because



those who commit them sin against greater light and are resisting stronger influences for good than have ever before existed. But in spite of this the influence of lives that have been touched by the Divine life has transformed the world of Caesar into the world of today, and is working transformations more rapidly now than ever before in the history of the human race.

The kind of life that the caterpillar has causes it in time to slough off its hairy outer covering and all of those organs that pertain only to its lower form of life and take on new forms more beautiful and better adapted to higher external conditions. So the nations have been sloughing off those hideous excrescences of human life, gladiatorial shows, suttee, infanticide, slavery, human sacrifices, cannibalism, feudal wars, massacres of prisoners taken in war, mitigating the horrors of war and so on.

Christianity builds hospitals for the sick, almshouses for the poor, supplies the destitute, pities the unfortunate, relieves the distressed.

It changes laws and remodels governments and is doing this now with greater rapidity than ever before. We need only to point to the islands of the seas, to Japan, to China, to Persia, to Turkey.

But these results in the physical world only illustrate that power which finds its more perfect sphere of activity in the realm of the spirit where it is not limited by time or space or any other limitation of material conditions.

It is the life of God in man and that unites him to God by the ties of a spiritual consanguinity.

Christ came to impart that life.

## CHAPTER XVI

### *Concluding Words*

**F**OR a number of years a conflict has been going on in the Christian world over matters pertaining to religion. Heretofore the lines have not been sharply drawn so that the contending hosts were fairly drawn up on opposite sides with the issues distinctly outlined between them. But this seems to be no longer the case, particularly with the leaders of the contending forces. There are hosts of people between the two extremes of thought and hardly knowing which way to turn. On one side there is a man-made Bible, a religion of evolution, an egocentric theology, and salvation by culture. On the other side is a God-inspired Bible that is authoritative for instruction and conduct, a Christo-centric theology, a religion that is based solidly upon the atonement of Christ and salvation by the *credo*, "I believe on the Lord Jesus Christ": in other words salvation by faith as the power by which we appropriate to ourselves the new, the divine, the eternal life that He has to give us. This latter is the religious system that conquered the world in the first Christian century. There is no hope for its conquest in the twentieth except by the same gospel, which is the only gospel of Christ.

Men ask what shall be the preaching for an age of doubt? The answer would be, the preaching that admits no doubt about the eternal verities of the Christian faith. There must be no evasions of the truth that men are dead in sin, and can be made alive only by the power of the One who raised up Christ from the dead.

What shall be the preaching for the twentieth cen-

tury? The preaching that conquered the world in the first. It only can meet the facts in the world that are as hard now as they were then. It is, of course, not to be inferred that discretion is not to be used in presenting the truth. There are many phases of the true gospel, many truths in the one great truth. The phase of truth presented must be adapted to the people appealed to. Paul says, "Knowing, therefore, the terror of the Lord we persuade men." But he could also say, "I have not shunned to declare unto you all the counsel of God."

What shall be the preaching in view of the intellectual activity of the age? The preaching of the same truths, coupled perhaps with intellectuality enough to grasp the great facts recorded in the first chapter of Genesis, and enough to see that those chapters are the records of facts. If not the record of facts, the biblical cosmogony is, at least, in harmony with all the advances in astronomical science for the last hundred years. Its biogenesis absolutely corresponds with the records in the rocks. We need no theories of neo-creationism. The old creationism meets all of the conditions.

Archaeology, so far as it touches the Bible, confirms its historicity. The Jewish race is a monument to that historicity. The Bible as it is, without human emendations or corrections, is a record of facts not only in cosmogony and biogenesis but of facts in human experience, and of eternal principles that determine that experience.

It has been said that "so long as the majority of theologians treat the Bible as a book of oracles, so long will it appear as a book of fables to the majority of the educated laity." Whether this is true or not depends upon the amount and kind of education "the educated laity" have, and the spirit with which that education

was pursued. A most deplorable feature of the present time is the spirit of exultant joy, the perfect satisfaction, the supreme complacency that we know so much, rather than of humility that we know so little. But the highest reaches of human intellect as yet have been but as a balloon journey toward the stars.

There may be a kind of education that would lead men to despise the oracles of God, but in doing so it places human conceit above Divine wisdom. The Bible, to a great extent, gives an account of its own origin, and the ages have substantiated that account. The martyr Stephen called the Mosaic law, at least, the oracles of God delivered to Moses. Paul, Peter, the writer of the Epistle to the Hebrews and others of the inspired writers refer to the books of the Bible as the oracles of God. The old prophets spoke of the oracles of God and subsequent events have proven their words to have been such. So long as men substitute their own imaginings for the truths of God, so long will they confuse the oracles of God with those of Delphi or some other heathen shrine. They do not belong in that category. Paul could say in his time, "We preach Christ crucified, unto the Jews a stumbling block, and to the Greeks foolishness; but to them that are called, both Jews and Greeks, Christ the power of God and the wisdom of God." (I Cor. 1:23,24.)

There are, essentially, the same classes now. The intelligent layman need not despise those oracles. The intelligent preacher need not and does not stultify himself in preaching the same facts that Paul preached, the facts of a personal God, a God creating, a God revealing himself in the scriptures of truth, a God redeeming, a God present and guiding, and a new life created in those who believe on the Lord Jesus Christ. The stultifying

is on the part of those in the church, who, like wolves in sheep's clothing, are covertly and insidiously subverting the truths they are paid to advocate. The call to-day is the call of Moses at Sinai, of Elijah at Mount Carmel.

## APPENDIX

### *Notes to Chapter I*

(a) This rapid contraction would necessarily produce a spiral nebula. For a discussion of this subject and for the proof of several positions I have taken in this article, see Prof. Moulton's article, *Evolution of the Solar System*, in the *Astrophysical Journal* for October, 1905.

(b) With reference to these nebular densities note the following from the *Ency. Brit.*, Art. Geology. "The fact of condensing around centers, however, indicates at least differences in densities throughout the nebulous mass." See also the article of Prof. Moulton referred to above.

(c) This action can be better understood by showing it to be according to the law of pendulum vibration.

The force that would be exerted upon a ball falling through the earth would be in proportion to the distance yet to be traversed. The same is true of the pendulum. In figure 2 place the pendulum ball at any point as at e. A part of the force of gravity acting along the line c e would be expended in the pull upon the pendulum rod. The remainder would be expended in urging it along the tangent f g. This latter is as the angle a e c. But this is = to the angle b a e, and this is the measure of the distance yet to be passed through, the same as that of the body falling through the earth.

(d) About eight months after this statement about the Great Red Spot was written, the following item was going the round of the papers.



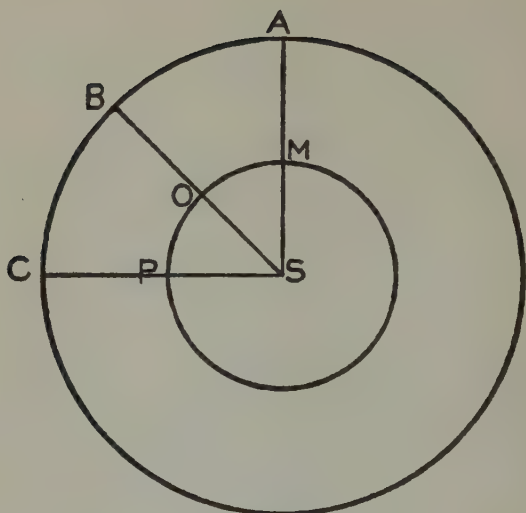


FIGURE 1

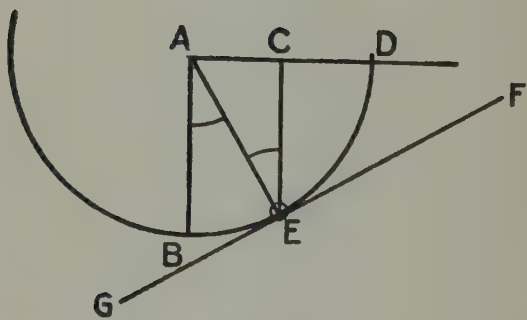


FIGURE 2

*Something Hovering Over Jupiter*

“A discovery of considerable importance in astronomical circles has recently been made which is arousing much interest among astronomers,” says the *Toronto Globe*. “The planet Jupiter is the body upon which the discovery has been made. Several peculiar pyramid-shaped spots have been observed on Jupiter, and the astronomers who have been watching them have observed that, as they travel with great velocity toward the object known to astronomers as the Great Red Spot, they disappear and reappear at the other side of the Great Red Spot. *This seems to indicate that the Great Red Spot is elevated, something which was not known before.*”

This seems to completely confirm the author's statement.

(e) The *Ency. Brit.*, article Geology, mentions three theories as to the internal condition of the earth. First, solid crust, molten interior, 2d, with the exception of local vesicular spaces, it is all solid, 3d, solid interior and exterior with a layer of molten matter between.

With regard to internal fluidity Mr. Hopkins of Cambridge, (in 1839) calculated that the phenomena of precession and nutation could not possibly be as they are if the planet consisted of a central ocean of molten rock surrounded by a crust 20 or 30 miles thick, and that the least possible thickness of crust consistent with the existing conditions or movements was from 800 to 1000 miles.

Sir William Thomson, the late Lord Kelvin, arrived independently at the conclusion that the interior of the earth must be solid. He estimated that the tide-producing force of the moon and sun exerts such a strain upon

the substance of the globe that it seems in the highest degree impossible that the planet could maintain its shape as it does, unless the supposed crust were at least 2,000 or 2,500 miles in thickness.

His conclusion is that the globe as a whole must be of the tenacity of glass or steel to resist these forces. In his own words his conclusion is that the mass of the earth, "is on the whole more rigid than a continuous solid globe of glass of the same diameter."

This is pretty good evidence of the correctness of my own conclusion, arrived at simply by processes of reason.

(f) With regard to these transient bursts of light note the words of the scientist, Dr. J. R. Meyer: "The transient appearance of stars which in some cases, like the celebrated star of Tycho Brahe, have at first an extraordinary degree of brilliance, may satisfactorily be explained by assuming the falling together of previously invisible double stars." (Correlation and Conservation of Forces, page 355.)

(g) In speaking of species it is well to remember that the term is a rather variable one. It is admitted that some of the so-called species may have originated from some other so-called species. The statement is simply that there is no evidence that such has been the case.

However hard it may be to conceive that each one of the species, for instance, of the 700 of ganoids is an original creation, and that the creation form is the terminal one, there is no evidence that there has been a single case of transmutation. However, it may be that future discoveries may show that the term "variety" should be used where the term "species" is now employed.

(h) The "slimy ooze" of Prof. Huxley, which he

thought was endued with power to produce all kinds of life either directly or indirectly, was finally discovered to be but a precipitate that could be produced by simply mixing alcohol with sea water.

(i) See E. Ray Lankester on Degeneration.

#### EXCURSUS I

Closely connected with this subject of nebular densities starting off on orbits of their own, is a consideration of the sesquiplicate ratio of times and distances of Planets or "Kepler's Third Law."

The sesquiplicate ratio of the times and distances of the planets is necessary from the fact that the force of gravitation varies as the square of the distance, and that with falling bodies the distance is as the square of the time. To demonstrate the law a few principles must be admitted as axiomatic.

1st. A body moving in a circle deviates from its tangent according to the law of falling bodies.

2d. Any power of the ratio of two or more numbers is the ratio of the same power of those numbers.

3d. The force of gravitation varies as the square of the distance. In fig. 2 (page 201) let S represent the position of the sun, M the position of one planet and A that of a planet supposed for convenience to be just twice as far from the sun. The ratio ( $r$ ) of distances would then be 2. Let  $d$ =distance of M from the sun and  $D$ =that of A from the sun. Let  $t$ =the time for M to pass from M to P and  $T$ =the time for A to pass from A to C or through  $\frac{1}{4}$  of its orbit.

As attraction varies as the square of the distance, it is plain that the sun exerts but  $\frac{1}{4}$  of the power at A that

it does at M and hence a body at A would *fall*, or be drawn from its tangent, only  $\frac{1}{4}$  as far in a given time as one at M. At the same time it has twice as far to go to complete the  $\frac{1}{4}$  of its orbit that M has. So, *if there were no other consideration*, that is, if the distance fallen through were as the time we should have the proportion  $t : T :: 1 : r^3$ . But the distance varies as the *square* of the time, so that instead of simply  $t$  and  $T$  we have  $t^2$   $T^2$  and the proportion would become  $t^2 : T^2 :: 1 : r^3$ , where  $t^2 = \text{"t square"}$  and  $r^3 = \text{"r cube."}$  This is by far the most convenient formula to apply in practice. Take for example the time and distance of the earth as a standard and we have only to multiply the square of its time by the cube of the ratio of distances and we have the square of the time of any other planet.

To obtain the ordinary formula of Kepler's Third Law we have only to remember the second principle stated above and for  $1 : r^3$  substitute the numbers themselves and we have  $t^2 : T^2 :: d^3 : D^3$ . What is true of one ratio is true of any ratio and what is true for  $\frac{1}{4}$  of the orbit is true for the whole, so that the ratio of the times and distances of the planets is *necessarily* sesquiplicate.

It is sometimes stated that the law is not quite true. It is, however, necessarily and absolutely true of itself, and would appear to be so if there were no disturbing circumstances. If, for example, the solar system were entirely isolated from other stellar bodies so as to be undisturbed by them, the planets all of the same size moving through a nonresisting medium and in *circular orbits*, or orbits of the same degree of eccentricity, there could be no possibility of variation from the harmonic law.

In seeking the causes of variation from that law the

writer found what he believes to be a true law and the principal cause of variation from the harmonic law. Briefly stated it is this: *A planet moving in an elliptical orbit has a longer year than one at the same mean distance would have moving in a circular orbit, or the greater the ellipticity the longer the year in proportion to its mean distance.*

It seems as if this must appear from the following reasoning. In a circular orbit the mean distance is simply one radius,— $r$ , or for a convenience of com

$4r$

parison — But suppose a circle of the same size or cir-

$4$

cumference to be depressed at two of its sides so as to have a major and a minor axis. The major axis does not lengthen as much as the minor axis shortens, for when the minor axis becomes zero the major axis has become only  $\frac{1}{2}$  of the original circumference and the

$2\pi r$

$4r$

original — becomes  $\frac{2}{4}$  or  $\frac{\pi r}{4}$  Clearing of

$4$

fractions the  $4r$  of the circle becomes  $\pi r$  when the minor axis has disappeared. But  $\pi$  does not equal 4 but only 3.1416. The limit of possible variation then is between 4 and 3.1416. To maintain, then, the same mean distance from the sun, the elliptical orbit must be lengthened as eccentricity increases and as in a given time and at a given distance the sun can produce only a given effect, it would seem as if it must take longer to carry a planet around the longer elliptical orbit than around the shorter circular one of the same mean distance.



The writer of this paper arrived at this conclusion without knowing whether the years of the several planets were longer or shorter than required by the harmonic law. He tried to ascertain these facts by correspondence, but failing in this, he applied himself to the task, using Kepler's full formula and confirming some of the results by using his own shorter one (*i. e.*,  $t_2 : T_2 : : 1 : r_3$ .) The results surprised and gratified him by confirming his views *in every particular*. But before speaking of these results we must refer for a moment to the cause commonly attributed to account for the variation, *viz.* the size of the planets. This will require but a few words as it is treated in recent text books on astronomy. But the only possible result of increasing size would be to shorten the year. For instance, the actual year of Jupiter is 2.067 days shorter than it would be if it were a mere particle. The earth's is 47.8 seconds shorter.

It would seem, then, that taking the time and distance of the earth as a standard of comparison, all planets larger than the earth should have a shorter year than that required by the harmonic law, and from the preceding conclusions as to the effect of ellipticity, all planets whose orbits are more elliptical than the earth's should have a longer year than required by the harmonic law. Which exerts the controlling influence can be learned by calculation. Unless the writer of this paper is very much mistaken in his own calculations and at the same time fails to understand Newton's application of the law, eccentricity of orbit exerts the controlling influence, *for without exception all the planets whose orbits are more eccentric than that of the earth have longer years than required by the harmonic law when the time and distance*

of the earth are taken as the standard. The two whose orbits are less eccentric have shorter years than so required.

For convenience of present investigation the following table is placed before the reader. It contains calculations made by the author four or five years ago with one or two corrections made recently:

Planet	Mass.	Eccentricity	Sq. of Actual Years, days	Square of Year by Har. law, days
Mercury .....	0.1183	.205618	7744	7737
Venus .....	0.8832	.006833	50445	50583
Earth .....	1.0000	.016770	Standard	-----
Mars .....	0.1324	.093262	471969	470543
Jupiter .....	338.0342	.048239	18771293	18713900
Saturn .....	101.0637	.055996	115757081	115511778
Ur .....	14.7889	.046577	930692169	885500000
Nep. ....	24.6483	.008719	3615256224	3812000000

The first two columns (mass and eccentricity) are taken from Snell's Astronomy and differ a little from those given by Prof. Young in his astronomy, but the difference is too small to affect the general result.

About four years after making the above calculations the author had occasion to consult Newton's Principia and from that takes, though in a different form, the following table. Mean distances of the planets and of the earth from the sun (omitting the three right hand figures) according to—

	Kepler	Bullialdus	Harmonic law
Mercury .....	38806	38585	38710
Venus .....	72400	72398	72333
Earth .....	100000	100000	100000
Mars .....	152350	152350	152369
Jupiter .....	519650	522520	520096
Saturn .....	951000	954198	954006

Consulting the first table we see that in every instance where the eccentricity is greater than that of the earth's

orbit, the actual year is longer than required by the H. L. In the two instances (Venus and Neptune) where the eccentricity is less than that of the earth's orbit, the actual year is shorter than is so required.

With regard to the second—Newton's—table, Uranus and Neptune were unknown to Newton and, of course, they are not mentioned. Then, too, instead of computing the *time* as required by the H. L., as the present writer did, he computed the *distance* as required by the actual time, and, taking the distance as given by Bullialdus, which is more nearly correct for Mercury, and that given by Kepler, or both, for the others, in every instance his conclusions coincide with those in the first table. For instance, the distance of Mercury calculated from its actual year is greater than its actual distance, showing that its actual year is longer than required by the H. L. In the case of Venus the distance as computed from its actual year is less than the actual distance, showing that its actual year is less or shorter than required by the H. L. As far as Newton's table goes it sustains in every particular the correctness of the conclusions recorded in the first table and both confirm the inference before stated, *i. e.*, taking the time and distance of the earth as a standard of comparison *every planet whose orbit is more eccentric than the earth's has a longer year than is required by the H. L. Those whose orbits are less eccentric have shorter years than so required.*

Of course the time and distance of any other planet could be taken as the standard without affecting the principles involved.

From the foregoing it will be seen that the exact effect of eccentricity can be ascertained by sufficient accuracy of computation. The author's calculations were made

for general results or for finding the general principle, and decimals were omitted, which might be required for accurate results.

But it would require only the fundamental rules of arithmetic with that for square root for such computations. First ascertain the effect of size. (See Art. 436 and 417, *Young's General Astronomy*, Ed. of 1898.) For instance, Jupiter's year is a trifle over 2 days shorter than if it were a mere particle. The earth's is 47.8 seconds. These show the effects of sizes. Carry on the computations for the other planets, then ascertain the exact difference between the actual periods of the planets and those required by the H. L. Add or subtract as the case requires and the result will be the effect of eccentricity of orbit.

A very much easier way, however, to calculate the effect of ellipticity is to calculate it from the difference between the actual distance and that as calculated by the harmonic law.

For instance, from Newton's table above take the actual distance of Saturn, as given by Kepler, and subtract this from the distance as Newton calculated it by the H. L. and we have  $954,006,000 - 951,000,000 = 3,006,000$  miles difference in distance. Multiply this by 3.1416 and we have 9,443,650 miles difference in length of orbit. Divide this by its orbital velocity (6 miles per second) and the result is that Saturn's year is, or would be if Newton's data were correct, about 18 days longer than it would have been if its eccentricity had been only equal to that of the earth. Of course the distances of the planets had not been ascertained in Newton's time so accurately as at present, but the above is designed to

illustrate the method and, approximately, the effect of eccentricity in one instance.

Any one who chooses can carry out this method, but for the present, at least, the author leaves the subject with these general results, and the suggestion before made that the effect of eccentricity is manifested only as the orbits have different degrees of eccentricity.

## EXCURSUS II

A few thoughts in connection with the condition of the sun not expressed elsewhere may be admitted here.

Some astronomers have suggested that the heat of the sun may be maintained by the continuous precipitation of matter upon its surface. A sufficient answer to that view is that any increment to the sun's mass would occasion a shortening of the years of all of the planets. For example, an accretion of  $\frac{1}{2000}$  of its own mass would shorten the year of Jupiter by more than a terrestrial day while the variation of a few seconds would be noticeable. Such a theory is not tenable.

Again, one astronomer asserts that the sun's contraction of 300 feet per year would supply all of the heat lost by radiation. But first, this view presupposes an external force acting upon the sun from without, squeezing the heat out as one would squeeze water from a sponge, while the fact is that if there is any contraction at all it is the result and not the cause of a loss of heat.

Again the amount of contraction would depend upon the nature of the sun's substance and its capacity for heat or specific heat. If, with the specific heat of water it would contract 300 feet, with that of lead or bismuth it would have to contract 9,000 feet, or at least it would



have to reduce its temperature 30 and more times as much as it would were it of the specific heat of water.

But whether it would shrink at all or not as it gives out heat depends upon the nature of its substance. Water expands in cooling from 39 degrees to 32 and continues to expand as it is converted into ice. In the same way bismuth expands through the whole process of cooling.

It is not, however, necessary to suppose that the sun's heat remains constant from age to age, but there is reason to believe that the sun is not cooling off so rapidly as it would by radiation if there were no source of supply of heat.

One of these sources of supply, which is at the same time an evidence of the recency of creation, is suggested in the following communication to a local daily paper:

#### IS THE SUN COLD AND SOLID?

Editor Sun:—Some years ago I published, in my "Suborganic Evolution," the opinion that the body of the sun is cold and solid. This conclusion was reached by reasoning from fundamental principles. I have never had occasion to change that opinion. On the contrary that view is confirmed by more recent thoughts upon phenomena connected with the sun. Farther than that, we have reason to believe that it is composed of dissociated elements, and that the flames on the surface of that body are real fires occasioned by combustion, or union of those simple elements.

The late Prof. Young of Princeton advanced the idea that these flames might be produced by the recombination of gases that had once been combined, and then



dissociated. But there is no reason to suppose that they had ever been combined before. Between 35 and 40 distinct simple elements have already been discovered in the sun's photosphere. All we have to admit is that oxygen, hydrogen, carbon or some other elements which have a strong affinity for each other may exist in juxtaposition, mingled in varying quantities and purity. As heat penetrates toward the interior and raises these to the ignition point, all the varying phenomena of flames, spicules, prominences, etc., would be produced.

At times immense quantities of oxygen, hydrogen or carbon may exist in juxtaposition with other non-combustible elements which retard combustion so that it proceeds slowly and so produces ordinary flames such as seem to cover the most of the surface of the sun.

One astronomer observes: "The appearance, which probably indicates a fact, is as if countless jets of heated gas were issuing through vents and spiracles over the whole surface, thus clothing it with flame which heaves and tosses like the blaze of a conflagration, 'like a prairie on fire.' " How can it be better accounted for than upon the supposition that it is fire? At other times, instead of the elements being so mingled as to produce ordinary flame, thousands of cubic miles of oxygen, hydrogen, carbon or some other element may exist in proper proportions to make an explosive compound which when ignited would throw some of its own and superincumbent material hundreds of thousands of miles above the surface. Thus the "prominences" can easily be accounted for. The cavities thus produced, together with the cooling and downpour of this material, as well as other circumstances which we cannot stop to consider may account for the principal phenomena in the sun's appearance.

Prof. Young, referred to above, thought that the dissociation and recombination of these elements could not produce the high temperature of the sun. But, in the first place, such a process could not be expected to produce any great effect for, according to the principle of the conservation of force, as much would be expended in the process of the separation as would be given out by their reuniting. In the second place, I have always been skeptical as to the correctness of the speculations regarding the sun's temperature. And this skepticism is not diminished by the remarkable divergence of opinions in regard to the matter; some placing the temperature as high as 18,000,000 degrees, Fahrenheit, while others place it as low as 3,000 degrees Fahrenheit. The union of oxygen and hydrogen or of oxygen and carbon produces a temperature of about 5,000 degrees; that of oxygen and acetylene gas between 6,000 degrees and 7,000 degrees, Fahrenheit. Other elements in the sun, by their combinations, may produce still higher pyrometrical effects. Indeed, we can place no limits to the possibilities of the sun in this regard.

Of course it is only the center or main body of the sun that is supposed, as Sir William Herschel supposed it, to be cold and solid.

Another thought in this connection is that this combustion on the sun has not always proceeded at the same rate. At times it may have been rapid enough to have produced a tropical temperature in the polar regions of the earth. At other times it may have been slow enough to produce the age of ice.

Still, these conditions of the earth probably have been owing almost entirely to the geological and meteorological condition of the earth and its atmosphere. It is an ex-

ceedingly interesting subject and very much more might be said in support of my views upon it, but this is probably enough for this time.—A. L. Gridley. (*Parsons Daily Sun*, August 20, 1910.)

















